GEOGRAPHIC INTELLIGENCE REPORT

PHYSICAL AND CULTURAL GEOGRAPHY OF WEST CHINA

Kansu, Sikang, Tsinghai, and Northwestern Szechwan

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Summary

West China, comprising Kansu, Tsinghai, Sikang, and northwestern Szechwan, is a series of terraces or steps buttressed by great latitudinal ranges, which descend in elevation to the north, south, and east from the vast and lofty saucerlike basin of Chang Thang in the west-central part of West China. The steps in the descent are most clearly defined to the north, where terraces of the Tsaidam Basin and Mongolian Plateau are successively lower and are set off from each other by mountain ranges -- the Kun-lun Shan and the Nan Shan. To the south, the first step down is to the Tsangpo Basin south of the Nyenchhen Thanglha ranges and the second is to the lowlands of India beyond the Himalayas. East of the Chang Thang, the steps are less abrupt, and terrain regions are less pronounced. The Salween, Mekong, and Yangtze Rivers form along the alpine rim of the Chang Thang and cross the gradual slope of the Outer Plateau, flowing to the east and southeast until their subtropical gorges cut through the plateau edge in southern Sikang. The north-south mountain rim of the Tibetan Plateau extends along the entire eastern border of West China. It not only links together the east-west ranges but also forms a major geographic boundary -- that between the monsoonal agriculture of China Proper and the arid nomadism of West China.

Along the boundary between agriculture and nomadism, there is also a broad cultural transition zone that extends from the Yangtze

River in the south to the Nan Shan in the north. The transition is from the Confucian-Buddhist Chinese agriculturists on the east to Lamaist Tibetan nomads and shifting agriculturists, with admixtures of relict aboriginal shamanistic tribes, on the west. In Kansu, the agriculturists of the transition zone comprise two coexisting but culturally divergent groups -- the Han Chinese and the Hui people (Chinese Moslems). West of the border area, in the high steppes and arid intermontane basins, are the nomads -- the Tsang Tibetans south of the Central Mountain Belt and the Tsaidam Mongols to the north.

All the cultural groups of West China have evolved distinctive adjustments to their environments, which range from the northern arid steppes and deserts through the western high alpine deserts and steppes to the humid semitropical forests in the southeast.

Partly because of their different modes of life and partly because of their incompatible social and religious norms and practices, the various ethnic groups are in conflict wherever their territories touch. The Han Chinese and the Hui people conflict over religious norms and practices; the Chinese, the Kham Tibetans, and the aboriginal tribes are at odds over the small available amount of arable land; the Chinese and Moslems have trade differences with the nomads, both Tibetan and Mongol; and among the nomads, there are differences born of the age-old struggle for survival in the steppes and deserts. Catalytic to these points of conflict are the harsh political, social, economic, and ideological controls superimposed by the Chinese Communists on West China. In conflict with these measures are the ancient

social, economic, and religious controls exercised by the Lamaist monasteries over the peoples of West China.

The distinctive adjustments to specific environments (both physical and cultural), the lines of culture contact and conflict, and the evolving pattern of social control constitute the major elements of the cultural geography of West China.

I. People and Environment in West China

A. Environmental Adjustments and Cultural Relations

The mutual dependence among the various physical and cultural environments of West China and the distinctive adjustments that the major ethnic groups have made to their environments have given rise to three major problems that bear on the future of West China: (1) environmental adjustment, (2) culture contact and conflict, and (3) social control. The first problem -- essentially the business of keeping alive -- occupies the energies of all who live in or travel through West China. The special characteristics of environment and differences among ethnic groups have a bearing on the social and economic future of the various regions -- the future of nomadic herding, of sedentary or intensive agriculture, or of Communist-developed mining and industry. The present status and future development of corridors and routes of communication and transportation, important to military and political control as well as to trade, are dependent upon a knowledge of how to get along in a specific region.

The second problem deals with the spread of and contacts between different types of culture and the resulting cultural integration or disintegration. Culture contact, conflict, and acculturation have important effects upon intraregional movement, trade, and the economic and political development of West China.

The third problem is concerned with the social and political systems set up by ethnic groups to enforce conformity to the accepted ways of life. The traditional modes of social control and the superimposed

controls of the Chinese Communists not only have an effect on the pace of acculturation and the future economic and commercial development of West China, but also are indispensable factors in the determination and assessment of strategic routes and areas.

B. Regional Divisions of West China

1. Physical Basis

Terrain in West China varies in three dimensions: latitude, longitude, and altitude. Physiography and climate set a terrain pattern that ranges from alpine meadows and snow-capped peaks in the south to barren gravel and sand deserts in the north, and from wet monsoonal forests in the southeast to high, arid alpine deserts in the west. On the accompanying map (CIA 12615) terrain regions have been delimited on the basis of their most characteristic physical feature: vegetation, climate, soils, landforms, elevation, or combinations of these factors.

Three mountain ranges that extend from west to east across West China provide an initial basis for regional differentiation. In the north, the Astin Tagh enters West China along the northwestern border of Tsinghai, and its southern branch, the Nan Shan (Region B*), straddles the Kansu-Tsinghai border, terminating at the Yellow River in eastern Kansu. North of the Nan Shan is the Kansu Corridor (Regions A1 through A3), a discontinuous string of fragmented cases that extend

*Regions designated by letter or letter and number are keyed to the accompanying map, CIA 12615.

from central Kansu to the western border of Kansu. North and northeast of the Kansu Corridor lies the Pei Shan (Region A4), including the Mongolian Plateau and vast stretches of hamada (bare gravel desert) and erg (sandy desert).

South of the Astin Tagh-Nan Shan chain and lying along the imposing barrier of the Kun-lun Shan and the Amne Machin Ranges is a series of intermontane basins extending from the northwestern border of Tsinghai eastward to the Yellow River. This region includes the interior desert basin of the Tsaidam (Region D) and the steppe basin of the Koko Nor (Region C4).

The series of ranges that enters Tsinghai at its western border and extends east and southeast across West China includes the Kun-lun Shan, the Amne Machin, and the Bayan Kara Shan (Region E). The ranges culminate in the east in the headwater region of the Yellow River. This group of high mountain ranges forms the northern border of the Chang Thang (Region F1), the high, cold, desert plateau of Tibet, and the rolling grass-covered Outer Plateau of Tibet (Region F2), which extend from the Tibetan border southeastward to the deep gorges along the southern Sikang border (Region G). A third mountain range, the Nyenchhen Thanglha (Region H1), forms the southern boundary of the Outer Plateau in western Sikang and the northern boundary of the Tsangpo Basin (Region H2). The range extends from beyond the western borders of Sikang to the south-central border of Sikang. The cultivated Tsangpo Basin extends east and west along the northern slopes of the Himalayas (Region H3).

The latitudinal regions of West China are bordered on the east by the longitudinal zone of the Sino-Tibetan Borderland. The borderland includes the Loess Plateau (Region C1), the cultivated valleys of the Yellow River, the Huang Shui (Sining), and the Wei Ho (Regions C2 through C4) in eastern Kansu, and the transitional zone of forested lands comprising southern Kansu, northwestern Szechwan, and southeastern Sikang (Region C5).

From the standpoint of elevation, West China consists of regional steps down from the Chang Thang, which has an average elevation of 16,000 feet. North of the Chang Thang, across the Kun-lun Shan, is the Tsaidam Basin at an average elevation of 9,000 feet. Farther to the north, across the Nan Shan barrier, is the Mongolian Plateau, which is 3,000 feet lower. Southeast of the Chang Thang, in the vicinity of the headwaters of the three great rivers, the Outer Plateau drops to an average elevation of 13,000 to 15,000 feet, with relative relief increasing as the valleys of the Salween, Mekong, and Yangtze Rivers deepen to the south. Beyond the Outer Plateau, a final drop in elevation occurs from the Sino-Tibetan Borderland to the Szechwan Basin.

2. Ethnic Basis

In West China there is a striking sociogeographic relationship between the various types of physical environment and the distribution of distinct ethnic groups. Between areas with different ways of life are transitional zones of cultural overlap in which the processes of acculturation and culture conflict are the primary characteristics.

The accompanying map shows the distribution of the various ethnic groups of West China in relation to the environments in which they live. The boundaries between ethnic groups are arbitrary, and the area occupied by one group should be assumed to grade into that of its neighbor. On the map, cultural overlap is shown only for the most complex zone of culture contact, which extends along the eastern border of the study area.

The Han Chinese constitute the dominant group throughout West China by virtue of the political control exercised by the Chinese Communists. The formal social control exerted by the Communists over the various minority groups in West China creates one of the chief problems of culture conflict and social control in the area. Numerically, the Han Chinese are in the majority only in the arable valleys of the narrow transition zone comprising the Frontiers of Chinese Agriculture (Region B). From here the Chinese agriculturists have advanced into the valleys of the highland areas of Tsinghai and Sikang and have come into conflict with Tibetan, Moslem, and aboriginal groups. The dominance of Han Chinese declines from east to west in Region B.

Coexistent with the Han Chinese are various Moslem minority groups: (1) the Hui people, who do not intermingle with other groups; (2) the Tung-hsiang (East Country) Moslems, who are concentrated in a triangular area between Lan-chou and Lin-hsia, formed by the junction of the Yellow River and the T'ao Ho; and (3) the Salars, a community in Hsin-hua Hsien, along both banks of the Yellow River east of Hsi-ning

(see map). Although a majority of these people are subsistence farmers like the Chinese, they have resisted assimilation and acculturation by the Chinese and have preempted the more adventuresome occupations, such as innkeeper, muleteer, carter, and soldier.

Opposing the tide of Chinese agriculturists in their advance into the frontier zone are the Tibetan nomads of the high grassland plateau that extends in an arc from the slopes of the Nan Shan north of the Koko Nor, southeastward around the headwaters of the Yellow River, to the headwaters of the Yalung, Yangtze, Mekong, and Salween Rivers (Region F). In the river valleys reaching up into the western edge of the plateau, the Tibetan component of the frontier zone ranges from partly Sinicized Tibetans in mixed Tibetan-Chinese villages to wholly Tibetan agricultural villages. This main zone of transition, where the processes of culture contact and acculturation can be seen at work, is indicated on the map by the admixture of Chinese and Tibetans in a belt extending from the Nan Shan in the north to southern Sikang in the south.

Farther to the west, beyond the grazing lands of Koko Nor and between the Nan Shan and Kun-lun Shan, is the area of the Tsaidam Mongols (Region D). Although these nomadic herdsmen range over the area, they are most likely to be concentrated in the grazing lands adjoining the springs and lakes fringing the Tsaidam salt swamp in the north, south, and east. Trade with the east and the attraction of the grasslands in the Koko Nor region bring the Tsaidam Mongols

into contact with the complex of ethnic groups in Region C, thereby complicating the pattern of culture contact.

In the south the slowly penetrating Chinese agriculture encounters a different Tibetan culture complex. The Kham Tibetans of the south are sedentary agriculturists, with livestock raising a secondary occupation. The Kham Tibetans terrace and farm the slopes of the deep V-shaped gorges of the Yalung, Yangtze, Mekong, and Salween. Within Region C the Kham Tibetan agricultural zone is so narrow in the north that there is almost immediate contact between the Chinese and the nomadic Tibetans. Farther south the Kham Tibetan zone widens. Consequently, the Chinese agriculturists here compete with their Tibetan counterparts rather than with nomads.

A number of aboriginal groups, which in a sense serve as buffer groups separating the Chinese from Tibetans, add to the complexity of the culture pattern in Region C. These groups are characteristically found in the more inaccessible mountainous parts of the region. In the headwater valleys of the Yellow River in the north are the Goloks. The Gyarong and Ch'iang tribes are located in the high mountains of northwestern Szechwan. Farther to the south, in the mountains within the lower bend of the Yellow River, are the Yi-chia, Independent Lolo, and several other tribes. On the accompanying map the general extent of the territory of these tribes is indicated as intermediate to the overlapping zones of Chinese and Tibetans.

3. The Geographic Regions

West China is divided on the accompanying map into eight major terrain regions: the Kansu Corridor, the Nan Shan, the Sino-Tibetan Borderland, the Tsaidam Basin, the Central Mountain Region, the Tibetan Plateau, the River Gorges Region, and the Tibetan Valley Area. Each of these constitutes a distinctive complex of landforms, climate, and vegetative features which differentiates it from the adjoining region. The map also indicates the general distribution of 11 major ethnic groups: the Han Chinese, the Hui people (Chinese-speaking Moslems), the Tsang Tibetans, the Kham Tibetans, the Tsaidam Mongols, the Tung-hsiang Moslems, the Salars, the Ch'iang, the Gyarong, the Yi-chia, and the Goloks. Each of these groups is made up of a number of separate tribes whose common way of life is shared by the other ethnic groups that inhabit the same terrain region or regions. Although specific customs and techniques may differ, there are generally common adjustments to particular environments, common modes of transportation, and even common forms of religious observance. On the basis of interrelation of types of terrain and ethnic groups, three major geographic regions have been delimited, each of which reflects the essential interdependence between ethnic groups and terrain regions -- (1) the Frontiers of Chinese Agriculture, (2) the High Steppes of Tsang Tibet, and (3) the Gorges Region of Kham Tibet.

The Han Chinese and other groups, ever in search of agricultural land, are infiltrating West China along its eastern and northern frontiers. In this zone of culture contact and conflict are the Kansu Corridor,

the Nan Shan, and the Sino-Tibetan Borderland, all of which are populated chiefly with Han Chinese, Hui people, Tung-hsiang Moslems, and Salars. These peoples share the more sophisticated agricultural way of life of China proper and come in contact, in the frontier zone, with nomadic tribes and sedentary agriculturists. In the southern part of the zone, the contact and conflict with nomadic and sedentary ethnic groups are further complicated by the presence of aboriginal groups -- the Ch'iang, Gyarong, and Yi-chia tribes. This frontier region of culture contact and conflict is considered in this report under the designation "The Frontiers of Chinese Agriculture."

The second major geographic region, the High Steppes of Tsang Tibet, includes the Tsaidam Basin, the Central Mountain Region, and the Tibetan Plateaus -- areas in which the problems of environmental adjustment are almost identical. The habitable parts of the three terrain regions are characteristically high-altitude, short-grass steppe. Nomadic pastoralism, the predominant way of life on the steppe, is followed by Tsang Tibetans on the Tibetan Plateaus, Tsaidam Mongols in the borders of the Tsaidam, and Goloks in the Central Mountain Region.

Kham Tibet, the third major geographic region, including the River Gorges Region and the Tibetan Valley Area, is characterized by primitive sedentary agriculture. Although the Han Chinese are penetrating the valleys of the Kham Tibetans along the frontier zone, the latter still maintain their way of life in the steep, inaccessible valleys along the major rivers of West China.

The three geographic regions with their component terrain and ethnic regions are given in the following table.

Geographic, Terrain, and Ethnic Regions of West China

I. The Frontiers of Chinese Agriculture

Terrain Regions	Ethnic Groups
The Kansu Corridor (Region A)	Han Chinese,* Hui People, Mongols
Wu-wei Basin (Region A1)	
Etsin Gol Basin (Region A2)	
Su-lo Ho Basin (Region A3)	
Pei Shan and Mongolian Plateau (Region A4)	
Nan Shan (Region B)	Tsaidam Mongols,* Tsang Tibetans
The Sino-Tibetan Borderland (Region C)	Han Chinese,* Hui people,* Tsang Tibetans, Tung-hsiang Moslems, Salars, Tsaidam Mongols
Loess Plateau (Region C1)	
Yellow River and Huang Shui (Sining) Valleys (Region C2)	
Wei Ho Valley (Region C3)	
Koko Nor Basin (Region C4)	
Border Forest Region (Region C5)	Han Chinese, Kham Tibetans, Ch'iang,* Gyarong,* Yi-chia*

*Asterisks indicate the dominant ethnic groups.

II. The High Steppes of Tsang Tibet

Terrain Regions	Ethnic Groups
Tsaidam Basin (Region D)	Tsaidam Mongols,* Hui people, Han Chinese
Tsaidam Salt Marsh (Region D1)	
Southern Corridor (Region D2)	
Tsaidam Gravel and Salt Deserts (Region D3)	
Tsaidam Sand Desert (Region D4)	
Tsaidam Steppe (Region D5)	
Central Mountain Region (Region E)	
Kun-lun Shan (Region E1)	Tsaidam Mongols, Tsang Tibetans
Amne Machin, Bayan Kara Shan, and the Headwaters of the Yellow River (Region E2)	Goloks,* Tsaidam Mongols, Tsang Tibetans
Tibetan Plateau Region (Region F)	
Chang Thang (Region F1)	Some Tsang Tibetans, but largely uninhabited
Outer Plateau (Region F2)	Tsang Tibetans,* Han Chinese

III. The Gorges Region of Kham Tibet

Terrain Regions	Ethnic Groups
River Gorges Region (Region G)	Kham Tibetans,* Han Chinese
Humid Gorge Region (Region G1)	
Arid Gorge Region (Region G2)	
Tibetan Valley Region (Region H)	Kham Tibetans,* Tsang Tibetans
Nyenchhen Thanglha (Region H1)	
Tsangpo Basin (Region H2)	
Himalayas (Region H3)	

*Asterisks indicate the dominant ethnic groups.

II. The Frontiers of Chinese Agriculture

A. The Culture Complex in the Agricultural Areas

1. The Chinese and the Moslems

The most outstanding characteristic of the Frontiers of Chinese Agriculture is the coexistence of two ethnic groups whose modes of living, while superficially similar, are essentially in conflict. The two predominating groups are the Han Chinese and the Hui people, or Chinese Moslems (Figure 1). Other Moslems are the Turki-speaking Salars and the Tung-hsiang Moslems.

The physical environment of the Chinese and Moslem groups is the same and the form of their social organization is almost identical. They are primarily agricultural and live in villages typical of North China. The villages are the basic units of social control, with the village headman responsible for the maintenance of law and order and the carrying out of government regulations. The larger villages may have family protection associations or organized units of the militia, but even the smaller villages are recognized as autonomous units by the hsien government. 1, 2/* Village development has been described as follows:

> When some peculiar suitability such as location on a well traveled road, makes a village acceptable to an entire district as a market town, it may grow to the proportions of a city. A typical farming village supports between 20 and 30 families. Whenever the population grows so large that those whose fields lie on the periphery can no longer go back and forth each

*Reference numbers are to the sources listed in Appendix D.

> day, the village begins to break up, those with the very distant fields becoming the nucleus of a new settlement. 1/

The Han Chinese and the Hui people are similar also in language and dress, but their most important common characteristic is that they are predominantly farmers of the small land-owning peasant type and follow the same seasonal agricultural routine. Seasons of comparative leisure alternate with seasons of great activity. Farming operations are begun in early spring when the fields are fertilized. The plowing and seeding is done by the men; cultivation, weeding, and harvesting by all members of the family. By early winter the threshing and winnowing of the grain are completed, a year's supply of food and seed grain is set aside, and any surplus that remains is sold to buy clothing and other necessities of life. Farm incomes are supplemented by the sale of wood, charcoal, or fodder. 1, 3, 4/

Peasant farmers have little livestock beyond a few sheep and a pig or two. A coarse homemade cloth is made from sheep's wool by farmers, using portable looms. 1, 5/ According to Ekvall:

> ... the food of the peasant is of the very coarsest, and he has but scant protection against the rigors of the climate; yet he feels that with his home and a regular yield from his fields there is little else he needs. Brushwood provides him with more firewood than the city dweller can generally afford. The stable droppings and the dried leaves and chaff which he gathers assures him of at least a hot kang on which to sleep (the kang is a sort of hollow platform made of dried mud and is heated from beneath by smudge fires). The days are not unpleasant; he can while away the hours just standing around in the winter sunshine, or

> he can inject a little adventure into his life by going to town with grain, fodder, or firewood, and perhaps bringing back with him something he was able to buy in the market. 1/

Despite the common mode of life, the two ethnic groups maintain separate villages, which alternate in an irregular pattern so that some districts are predominantly Chinese and others are predominantly Moslem (see map CIA 12615). In the larger villages, where the size of the population permits a diversification of occupations, there is a tendency for the Moslems to follow subsidiary occupations that require more hardihood and daring. Such occupations are those of innkeeper, trader, muleteer, carter, and soldier.

Since the Moslems are willing to risk possible seizure by the military forces, conscription into service by civil authorities, or the depredations of bandits, they have a monopoly on the hazardous trading profession. 1, 5, 6, 7/ The muleteer or carter also must operate with the expectation that at any time the results of years of work without rest, long miles on the road, and countless hours of feeding and caring for animals and gear may be wiped out overnight. They may be commandeered by civil or military authorities to carry persons or goods, or the military authorities or bandits may appropriate their animals outright. 1/ Even innkeeping in the frontier region is adventurous. Although the profits are large, the risks are great, since both bandits and military forces may come to an inn and demand free service. The innkeeper is likely to have the profits of a month wiped out by the unwelcome guests of a single night. 1/

The occupation in which the Moslems definitely excel is that of soldier. The pre-Communist Governor of Tsinghai, Ma Pu-fang, was once a carter in the army transportation service. 1/

The handicrafts, on the other hand, are generally monopolized by the Chinese, who make the best carpenters, silversmiths, blacksmiths, masons, and tailors. The Chinese also show a greater aptitude for schoolteaching, accounting, medicine, engineering, and administration. 1, 8/

Religious beliefs and other purely ideological factors, more than occupational differences, tend to set the two ethnic groups apart, and religious observances and habits integrate and reinforce the isolation of the segregated villages. Chinese religious observances include periodic communal festivals and theatricals and the communal maintenance of the local temple or shrine. These activities play a large part in maintaining community consciousness among the Chinese. 1, 4/

The Hui people regard the Chinese festivals, theatricals, and temple building as offensive idol worship. Although Islam is an individualistic religion, the Hui also have their special communal religious observances, such as the month-long fast of Ramadan, during which no good Moslem either eats or drinks between dawn and dark. Since Ramadan usually coincides with the Chinese New Year, considerable ill feeling is generated when the Moslems have to confront the Chinese New Year's feasting with long-faced abstinence. 1, 9/

The conflict between the Chinese and the Moslem minority is intensified in the case of the Turki-speaking Salars who have settled in Hsun-hua Hsien in the Loess Plateau region. While the Hui differ from the Han Chinese in religion, occupation or specialization, and community organization, they share a common language. The Salars, on the other hand, differ from the Chinese in language as well as religion, and the estimated 300,000 Salars in Kansu and Tsinghai have maintained an even more militant independence and isolation than have the Hui. 5, 9, 10/

Another distinctive Moslem minority is the Tung-hsiang Moslems, who live in a triangular area formed by the confluence of the Yellow River and the T'ao Ho and are estimated to number 200,000 people. It is reported that they maintain an even more belligerent community isolation than do the Salars, even though they have accepted a number of Chinese culture traits. The Tung-hsiang Moslems have been active in every Moslem revolt against Chinese authority in recent years, and they played an important role in the military organization of former Governor Ma Pu-fang. Their cultural exclusiveness is such that there are no Chinese communities within the Tung-hsiang Moslem area. 5, 9, 10, 11/

2. Land Reform and the Moslems

A manifestation of the Chinese-Moslem conflict in Kansu Province was an April 1952 Moslem uprising in which communications were wrecked, public grain was seized, and Communist cadres were

killed. According to the Hsi-an Ch'un Chung Jih Pao of 21 October 1952, "in the spring of this year when agrarian reform was being carried out in local districts, owing to defects and inertia on the part of certain cadres propagating and implementing the policy ... a rash decision was made to distribute the Moslem mosque lands voluntarily offered by Che-ho-jen-yeh, the leader of a local sect." The Moslems, already incensed by land-reform policies that were partial to the Chinese administrators, revolted when the reform program was extended to include the confiscation of mosque property (Figure 2) and made a determined but unsuccessful effort to gain control of the area from the Communists. 12, 13/

3. Trading Between the Moslems and Nomads

The pattern of trading in the northern part of the study area is closely related to the environmental conditions of the nomadic tribes and to the distinctive specializations of the Moslems. Trade in Tsinghai is carried on between the Moslems and the nomadic Tsang Tibetans and Tsaidam Mongols, rather than between nomadic and sedentary Tibetan tribes as it is in Sikang.

The need for trade among the nomads is based on the fact that nowhere in the steppe areas of the nomads is the altitude less than 11,000 feet, and agriculture is therefore nearly impossible. Few edible plants are available, and without the grain trade the nomads would be restricted to a diet of meat and milk products. The Moslems act as middlemen in exchanging the products of the nomadic tribes

for grain. The nomads produce most of the commodities for which there is a demand in China Proper -- lambskins, sheepskins, wool, and livestock. For the Moslems, trade is an especially profitable way of supplementing the income of subsistence farming. 1, 14/

A greater number of Tibetans take part in the reciprocal trade than do the Moslems. The Moslems operate from their farms or places of business and go into Tibetan country for periods ranging from 3 months to 2 years, whereas the Tibetans who journey to the Sino-Tibetan Borderland each year stay only a month or so. Consequently the Moslems, through longer contact with Tibetans, are more likely to acquire Tibetan culture traits. 1/

Most Moslem caravans organized to trade with the Tibetans are on a large scale. The size of a caravan, which is measured in "kettles," is proportionate to the degree of protection needed; large caravans also result in lower costs. The "kettle" denotes the members of a caravan unit that have a common campfire and food supply, that is, those who eat out of the same kettle. The "kettle" may vary in size from three to a dozen men. The smallest caravans have at least 2 or 3 "kettles"; the largest may include up to 40 or 50 (see Figure 3). 1/

Moslem caravans establish contact and obtain permission for travel through a "guest-host" relationship, which is initially established through a mutual friend. Upon reaching a tribe the caravan breaks up, each Moslem trading group going to its particular host.

The original caravan may never reassemble, but new caravans may be formed by groups who are going in the same direction or to the same tribes. The guest-host relationship may vary from a warm friendship to a very casual mercenary association, but the relationship is continued and renewed on each successive trading venture. The routine of contact between guests and hosts includes a number of social requirements, of which the most important is the presentation of a gift covered with the "scarf of felicity" (a small white or light-blue silk scarf, whose use is a polite congratulatory social gesture that must accompany every gift). The guest-host relationship furnishes the Moslem trader with a certain amount of protection and help in making trade contacts. For these favors the nomad host expects preferential rates. 1, 7, 14/

"The trading itself is the very ultimate in haggling and bargaining, with all the intricacies of Oriental concern with quality, quantity, and payment involved." 1/ Although much of the payment is in goods, there is little barter of article for article; catties of butter are used for "small change" and various weights of silver for the larger amounts. The Moslems bring to the Tibetan country cotton cloth, coarse silks, dry goods, needles, thread, colored cloth, satins and brocades, pots and kettles, rifles and ammunition, Russian leather, wheat, and luxury foodstuffs. The largest import item is grain. Tea, although a significant import item, enters the nomadic regions from the southern Sikang trading area, with its centers at Tatsienlu and Yü-shu. 1, 14, 15, 16/

The chief exports of the nomads are cattle, sheep, horses, and the products of livestock, such as wool, hides, furs, yak-tails, felt, sheep, and yak hair. Salt is also a major export from the Tsaidam Basin. 1, 15/

A Tibetan caravan has greater cohesion, integration, and degree of cooperation than is found in a Moslem caravan. The Tibetan caravans never break up until they return to the point of their origin, regardless of the delays and troubles encountered en route by individuals of the caravan. When they arrive at Moslem trading centers in the Sino-Tibetan Borderland, the individual members of the caravan may have separate "hosts" in the village, but the Tibetan caravan camp remains intact and does not break up into separate units. 1/

Tibetan caravans start out after the tribe has made its winter encampment but while grazing is still available and before the cattle have been weakened by the difficult winter. Thus the caravan period is limited to a few months in the fall and early winter, since the caravans cannot start until the winter encampment is made and cannot enter the Tibetan farming region until the grain harvests are in and the roads are open. A Tibetan trade caravan will stay in a Moslem community for no longer than 2 or 3 weeks, since the Tibetans are anxious to return to the midwinter festivities in the lamaseries. 1, 14, 15/

Moslem caravans start in the winter when the nomad's supply of furs is fairly well in and remain until the spring supply of

lambskins is ready. In some cases, Moslem traders make a quick trip of a few months before the deep snows set in. In most cases, however, the caravans stay through the winter, since late spring or early summer is the best time to trade for livestock. In any case, the best time to travel in Tibetan country is in fall and early winter, when the bogs are frozen, the weather is dry, and there is an abundance of dried fuel. 1, 14, 15, 16, 17/

Among the effects of the culture contact brought about through trading are: (1) the Tibetans have emerged from their isolation and have acquired a knowledge of the outside world through their contact with the Moslems and through their own visits to Moslem villages; (2) Moslem traders have become Tibetanized to the extent of adopting nomadic clothing, travel equipment, and words relating to travel or environments; and (3) the Moslem trader seems to have acquired some religious tolerance through contact with the nomads. 1/

B. The Kansu Corridor (Region A)

1. General Characteristics

The Yellow River, flowing north from the highlands of Tsinghai toward its great loop in the Ordos Desert, divides the Province of Kansu into eastern and western parts. The western part of the province, between the high ramparts of the Nan Shan on the south and the lower heights of the Pei Shan and the Mongolian Plateau on the north, constitutes the Kansu Corridor, a narrow trough extending from southeast to northwest. (Region A on the accompanying map.)

The Corridor is the westernmost extension of the Han Chinese agricultural complex into West China and is strategically located on the best natural route from China to the USSR. Farther to the south, travel over the route to the USSR via the Koko Nor, Tsaidam, and the Tarim Basin is handicapped by an unfriendly population and harsh environment. The routes from China through Sikang are oriented toward Tibet and India rather than the USSR, and all traverse extremely rugged terrain. The recent construction of the Lung Hai Railroad from T'ien-shui to Yung-teng beyond Lan-chou and the proposed extension of the line through the Corridor to Sinkiang and on to a connection with the Turk-Sib Railroad in the USSR emphasize the strategic importance of the Kansu Corridor in the development of Chinese trade with the USSR, as well as the interest in developing the northwestern provinces and far-western territories of China.

The Kansu Corridor is divided into three basins or oasis areas -- the Wu-wei (Region A1), the Etsin Gol (Region A2), and the Su-lo Ho (Region A3) -- each watered by streams that flow into it from the northern slopes of the Nan Shan. North of the basins are the desert lands of the Mongolian Plateau, in which desert shrub is the predominant vegetation.

The Wu-wei, the easternmost basin in the Corridor, is traversed by rivers that rise in the extreme eastern ranges of the Nan Shan and terminate in the sand desert northeast of the Wu-wei. The Wu-wei Basin is separated from the Etsin Gol Basin to the northwest by a low outlier of the Nan Shan. 18, 19/

The Etsin Gol Basin is watered by the Kan-chou Ho and the Lin Shui, which enter the Kansu Corridor from the southeast and the west, respectively. Northeast of Chiu-ch'üan, the two rivers combine and flow northeastward to the lakes of the Etsin Gol. The oases of the Etsin Gol Basin are strung along the northern side of the depression in the form of a triangle with its apex at the northern border of Kansu Province. 18/

The Su-lo Ho Basin is the terminal drainage basin of the Su-lo Ho and its tributary, the Tang Ho. North of the Su-lo Ho Basin a hamada, or bare-gravel desert covered with scrub, extends to the foothills of the Pei Shan. Beyond the Pei Shan and extending east to the terminal lakes of the Etsin Gol are areas of sand in which the only vegetation is xerophytic desert scrub. The same hamada also extends south to the foothills of the Nan Shan and forms the divide between the Su-lo Ho Basin and the Etsin Gol Basin. 18/

In the Kansu Corridor as in other sections of West China the natural routes of communication do not follow drainage lines but cut across them, moving from one drainage basin to the next across the hamadas that form the drainage divides. The northern part of the Kansu Corridor receives its underground water chiefly from the Nan Shan. Most of the oases are on the northern side of the depression. In general, the major areas of cultivation are located along the Kan-chou Ho and the Etsin Gol in the Etsin Gol Basin and along the Su-lo Ho and the Tang Ho in the Su-lo Ho Basin. 20/

2. Geographic Subdivisions of the Corridor

a. The Wu-wei Basin (Region A1)

The Wu-wei Basin contains the most extensive oasis of irrigated alluvial fans or flood plains in the Kansu Corridor. Like the similar but less extensive areas in the Su-lo Ho and Etsin Gol Basins, the irrigated areas of the Wu-wei Basin are bordered by stretches of lowland pasture that lie within the Corridor. The Wu-wei oasis extends along the foot of the northeasternmost range of the Nan Shan, from east of Ku-lang northwestward through Wu-wei to Yung-ch'ang, a small, isolated, cultivated oasis farther to the northeast, at Min-chin near the Kansu border. 19, 20, 21/

b. The Etsin Gol Basin (Region A2)

Two strings of oases comprise the cultivated area of the Etsin Gol. The eastern group includes the oases of Chiu-ch'üan and Chin-t'a, located in terminal depressions that receive streams draining the foothills of the Nan Shan. Cultivation is carried on for the most part with the aid of irrigation water obtained from the subsoil. To the northwest and east, the eastern depression is separated from the major basin of the Etsin Gol by gravel slopes and high sand dunes. The largest continuous area of oasis cultivation is around Min-lo and Shan-tan and follows the Kan-chou Ho past Chang-yeh north to the border area around Ting-hsin.

Small areas of cultivation and many traces of abandoned cultivation are found at the southern foot of the Nan Shan. Abandonment

is not uncommon, because oases are liable to change in position and in extent owing to the difficulty of maintaining canal heads in the shifting river courses, which pass over gravel fans or become deltaic upon entering the Corridor. 18, 20, 22/

c. The Su-lo Ho Basin (Region A3)

The Su-lo Ho Basin extends for some 220 miles from east to west. The Su-lo Ho descends into the eastern end of the Basin at Yü-men from its source in the central Nan Shan. North of Yü-men, the Su-lo Ho turns west into the basin and passes through the oasis of An-hsi, the departure point for the caravan route that leads northwest through the hamada to Ha-mi and farther into Sinkiang. The oasis of Tun-huang is located on the slopes of the Nan Shan where the Tang Ho, the only affluent of the Su-lo Ho, enters the basin. Except for these oases, the basin of the Su-lo Ho consists mainly of slopes of absolutely bare gravel descending from the western Nan Shan in the south and the utterly barren Pei Shan in the north. 18, 21/

d. Pei Shan and the Mongolian Plateau (Region A4)

North of the Kansu Depression, the bare gravel slopes of the Pei Shan and the sandy deserts of the Mongolian Plateau stretch out as a barrier of aridity along the entire length of the Corridor. This zone is sterile and incapable of supporting settled life or even nomadism. Considerable parts of the area are still unexplored. 19/

There is a definite transition of vegetation and landforms from the Kansu Corridor northward into the desert. Immediately beyond

the cultivated oases is a zone of desert vegetation consisting of tamarisks, wild poplars, or reeds growing in low drift sand. Closely spaced, conical sand-and-tamarisk hillocks up to 50 feet or more in height are distinctive features of this area. Beyond the low drift sand and scrub is the sandy desert, which may have a scant covering of saxaul shrub. Where soft clay soil is exposed, strong winds from the northeast constantly abrade the surface, forming an almost endless succession of parallel furrows and ridges, or yardangs. 18, 20, 22, 23/

Wild poplars (toghraks) usually mark the courses of running water, and lines of dead wild poplars are usually found along the courses of dried-up river beds in the desert areas and on the sides of dry alluvial fans. The boundaries between types of vegetation, often as sharp as a knife edge, are caused by variations in distribution of underground water. The differences between the vegetation of gravel slopes, on areas of loess soil, and in sandy areas are readily noticeable, and the likelihood of encountering a spring, a river, or underground water should be associated with these differences. 18, 20, 22, 24, 25, 26/

3. Settlement in the Kansu Corridor

The settlement and economy of the Corridor are closely related to the physical features. Along the northern slopes of the Nan Shan, and increasing in extent toward the northeast, are grasslands above 6,500 feet in elevation. Some forested areas are found on the higher north-facing slopes in the northeast section, intermixed

with grasslands containing scattered areas of pine and fir. Grass, forest, and desert-shrub vegetation together cover less than half of the Corridor, the remainder being gravel or sand desert. 8, 20/

The most intense cultivation is in the eastern part of the Corridor -- in Wu-wei, Chang-yeh, Ku-lang, and Yung-chiang hsiens -- but cultivated and other occupied land (roads, houses, etc.) makes up only 2.2 percent of the total land area. The remainder is either nonarable or dry grassland pastures. Upland grazing is concentrated chiefly in the eastern part of the Corridor along the northern slopes of the Nan Shan and in the hsiens of Chang-yeh and Yung-ch'ang, where mild winters and light snowfall make year-round grazing possible. In the highlands of the western part of the province, grazing is limited to the summer months, and the seminomads of western Kansu return to permanent settlements in the plains or mountains for the winter. 18, 19, 24/

The agricultural economy of the Corridor is based on self-sufficient farmers who occasionally produce a farm surplus, such as cotton or farm animals, that they can sell. Cooperative action is taken to protect crops in times of flood or drought, to provide irrigation, to establish credit, and to maintain the social relationships of families, clans, and secret societies. 8/

Wheat is the most important crop in the Corridor, and the sheep raised on irrigated pastures comprise 77 percent of the livestock in the area. They are usually the barter items for the Corridor farmers, being traded for tea and other commodities. As a result of

the isolation of the Corridor and lack of markets for livestock, farmers generally keep only a few more animals than are required to supply their own needs. 8/

Two main areas of population concentration in the Corridor are the Wu-wei Basin and the Etsin Gol Basin. Since the economy of the Corridor consists of self-sufficient farming and seminomadic livestock raising, the urban functions of the larger cities, such as Wu-wei and Chang-yeh, are limited to handicrafts and a few commercial activities. Inn and hotel services are probably the main commercial activity in the Corridor, with inns generally located along the main roads. 8/

The most serious handicap to the commercial development of the Corridor has been the lack of transportation. Although the Northwest Highway is the main artery of communication between China and the west and has a gravel surface and generally easy grades, only pushcarts and a few animal-drawn vehicles are available for local transportation. Together they are incapable of providing adequate commercial service for the Corridor cities. 5/

Despite the limited commercial activity, merchant guilds organized to carry on most of the trading in the Corridor have exerted a strong influence on the commerce and even the politics of the area. Guilds are also formed by craftsmen and by other occupational and special-interest groups. These guilds are important in the control of competition, wages, prices, and hours of work. 8/

The merchant and handicraft guilds constitute only the most obvious of the local community controls in the Corridor. Each of the various specialist groups -- merchants, craftsmen, subsistence farmers, and seminomadic herders -- has its own modes of occupational cooperation and related social controls. Each group tends to maintain its ethnic unity through such shared communal activities as religious observances, burial rites, and customs relating to food and housing. 8/

C. The Nan Shan and Astin Tagh (Region B)

The natural corridor of Kansu Province and the less well-defined corridor of the Koko Nor and Tsaidam Basins are separated by a series of mountain ranges that branch off from the Kun-lun system south of the Tarim Basin. The range that separates the Tsaidam Basin from the Tarim is the Astin Tagh. East from approximately the point where the Astin Tagh enters the southeastern corner of Kansu Province, the series of parallel ranges known collectively as the Nan Shan extends southeastward to the valley of the Yellow River. Outliers of the Nan Shan extend far to the south and east and form the drainage divide between Koko Nor and the Yellow River system.

Although the two mountain systems are penetrated by several major streams that flow into the terminal oases in the Kansu Corridor and by streams that terminate in the interior drainage basins of the Tsaidam, Koko Nor, and Tarim, few natural routes cross the mountains. The three major crossings are: (1) the road that follows the Ta-tung Ho to a pass on the Tsinghai-Kansu border and then down to Min-lo in

the Etsin Gol Basin, (2) a caravan track that connects the Su-lo Ho Basin with the northern Tsaidam oases of Bulungin Nor and Sukhain Nor, via the valley of the Tang Ho, and (3) a road that follows the southern edge of the Tsaidam swamp and crosses the Astin Tagh northwest of Ghaz Kul en route to Charkhlik in the Tarim Basin. 3/

The Astin Tagh has severely weathered, pinnacled crests and peaks surmounting hard, barren, rock slopes that form rugged eccentric masses. The high winds leave little loose material on the lower slopes, and the mountains have a characteristically peaked and jagged outline. 23, 27/

The Astin Tagh system consists of two ranges in the area northwest of Ghaz Kul and up to four ranges along the northern border of the Tsaidam Basin, which are arranged in a parallel system trending from southwest to northeast. Between the parallel ranges are latitudinal sedimentary basins and terminal lakes that are almost always dry but may be covered by a very thin sheet of water for one or two days a year. 5, 18, 23, 27/

The parallel ranges of the Nan Shan become higher from north to south, with the southernmost range including peaks that rise to about 20,000 feet. 23/

The Nan Shan can be further subdivided into the western Nan Shan, extending from the mutual drainage divide of the Lin Shui and the Su-lo Ho (south of Yü-men), and the eastern Nan Shan, including that section between the Koko Nor Basin and the Etsin Gol and Wu-wei Basins.

Although vegetation varies in type from grassland to alpine, the most common type on both north and south slopes of the western Nan Shan is bush steppe (semidesert to desert). 18, 27, 28/ The high valleys of the western Nan Shan are the winter grazing grounds of the northern Tsaidam Mongols. Some of the more important of the Nan Shan valleys are those of the Yeh-man Ho, the Shargaltein, and the Tang Ho. 18, 27, 28/

In contrast to the north-facing slopes of the western Nan Shan, those of the eastern Nan Shan from Etsin Gol to the Yellow River valley face the northeast. The moist influences of the Pacific winds are increasingly apparent toward the eastern end of the mountains. The most extensive tracts of mountain pasture begin at an elevation above 6,500 feet near Chang-yeh and extend along the crestline to the Huang Shui (Sining) Valley. Above the pastures are the most extensively forested areas in the Nan Shan. South of the crestline are flat, cultivated valleys bordered by treeless grass plains. 3, 8, 23, 29/

The northern slopes of the Nan Shan have no settlements and are occupied only by herdsmen of the Kansu Corridor who graze their sheep on the mountain pastures in winter (see p. 31 ff., "Settlement in the Kansu Corridor"). Most of the high valleys of the central Nan Shan Ranges as well as the southern slopes are occupied only during the winter months by the Tsaidam Mongols (see p. 63 for a discussion of the Tsaidam Mongols).

D. The Sino-Tibetan Borderland (Region C)

1. General Characteristics

The Sino-Tibetan Borderland is a region of extremely complex cultural contact comprising the frontier regions of eastern Kansu, northeastern Tsinghai, and neighboring portions of Szechwan and Sikang. It includes the Border Forest Region (Region C5), a zone of transition between the lowlands of China Proper and the uplands of the Loess Plateau (Region C1); the Yellow River, Huang Shui (Sining), and Wei Ho Valleys (Regions C2 and C3), the Koko Nor Basin (Region C4), a part of the Kansu Corridor and the eastern Nan Shan, and the northermost parts of the Outer Plateau. Because this area of ethnic contact includes so many different environments, it is necessary to summarize briefly some of the general physical and cultural characteristics of the area.

Elevations in the Sino-Tibetan Borderland vary from somewhat over 5,000 feet in the Yellow River valley to about 14,000 feet, the highest point of human habitation in this area. The temperature range between the lowest and highest climatic zones is greater than would normally occur in a spread of 20 to 30 degrees of latitude. Differences in elevation also result in striking rainfall differences -- in the lower regions the rainfall decreases with the elevation, whereas the higher levels have abundant precipitation during the summer. The winters throughout the area are dry and cold; precipitation occurs largely during the summer months. The seasons are much like those in the northern Prairie States of the United States. 5, 29/

The Han Chinese and the Hui people are located mainly in the Loess Plateau. With crop rotation and fertilization, excellent harvests are assured year after year in this area, without fallow. The only restricting factors are insufficient rainfall or a shortage of irrigation water. 1, 29/

Above the Loess Plateau, on the steppe or semisteppe of the Outer Plateau, loess gives way to alluvial deposits and glacial debris, with only a few pockets of loess remaining. The northern slopes of the mountain ranges are covered with a fair growth of spruce, juniper, birch, and a number of varieties of poplars and willows. People of the Outer Plateau combine the exploitation of timber and pastures with farming. 1, 3, 6/

The limit of agriculture on the Outer Plateau is about 11,000 feet. Above 12,000 feet the steppe is absolutely bare, but good grazing lands can be found as high as 16,000 feet in the mountains. The snowline in this area is at about 17,000 feet. 1, 29/

The Chinese of the Sino-Tibetan Borderland are characteristically of the northern type. Their language somewhat resembles Pekinese but has some tonal characteristics of the Szechwanese. The Chinese of the area tolerantly make Confucianism, Buddhism, and Taoism a part of their religious system. In eastern districts the ideals and practices of Confucianism predominate; in the west, where the influence of nearby Tibetans is strong, Chinese religion includes a large component of Buddhistic observances and practices, with some Taoism sandwiched in. 1/

The second major group of this area is the Hui people, a distinct racial group (see Figure 1) despite the fact that they occupy the farming areas jointly with the Chinese. They are descendants of the Arab mercenaries who entered China in the eighth century. Although successive intermarriages have diluted the Semitic strain, they can usually be distinguished from the true Chinese. The Hui people have adopted, with only slight modifications, Chinese-type houses, dress, manner of living, and other aspects of material culture, and they also speak the same language as the Chinese, with some variations. There are characteristic differences, however, in choice of occupation and astuteness in trading. 1, 3, 5/ The most distinctive difference is in religion. The Hui are strict and punctilious in their orthodox Islamic observance despite the fact that they are divided into a number of bitterly feuding sects. 1/

The third major ethnic group in the Sino-Tibetan Borderland is the Tibetan (see Figure 3). Language and religion are the distinctive characteristics of the Tibetans. Although there are some differences in pronunciation and construction, the language of Tibetan nomads in the Koko Nor area can be understood by Tibetans as far away as Lhasa or the Indian border.

Lamaism, or northern Buddhism, is commonly practiced throughout West China and includes not only many of the animistic or shamanistic practices of the early Bon religion of Tibet but also distinct sorcerer sects, which are linked with the orthodox or Yellow sect as part of the religious organization (Figure 4). 1, 3, 5/

2. Geographic Areas of the Borderland

a. Agricultural Areas

(1) The Loess Plateau (Region C1). The Loess Plateau area includes the extreme eastern section of Kansu Province, extending from the eastern boundary with Shensi westward to the vicinity of 103°E (Figure 5). The region consists of two parts: (1) the Kansu portion of the Shensi-Kansu Basin in the far eastern section of the province and (2) the southeast area, which is a plateau bounded on the south by the Wei Ho Valley and the Ch'in Ling Range, on the northwest by the Yellow River valley, and on the west by the forest belt in the bend of the Yellow River between 34°N and 36°N.

The Shensi-Kansu Basin is drained by the Lo Ho and the Ching Ho. The Lo flows into the Yellow River just above its junction with the Wei, and the Ching flows into the Wei almost opposite the city of Sian. The entire Shensi-Kansu Basin is covered with loess, which reaches some of its greatest depths in this area. In many places, gulches have been eroded to depths of more than 500 feet through the loess into the rock. The deeply dissected surface is not favorable to movement. Vehicles are restricted to narrow valley courses and to the few established roads, but there are caravan and foot trails throughout the area. The elevation of the basin rises gradually northward from the Wei Valley. The western edge of the basin is marked by the Liu-p'an Shan, which has precipitous peaks rising to 10,000 feet.

5, 6, 29/

The southeastern part of the Loess Plateau has an average elevation of 5,000 to 6,500 feet and is covered with loess to a depth of 100 feet or more. Narrow rivers in deep gorges deeply dissect the plateau, with steep cliffs over 300 feet high occurring in some places. Level areas are generally restricted to river courses or the summits of the hills (see Figure 5). 6, 29/ The Loess Plateau is drained by the Yellow River, which receives some of its largest tributaries in this area. West of Lan-chou the T'ao Ho joins the Yellow River from the south; east of Lan-chou the principal tributaries are the Tsu-li and the Ch'ing-shui. 6, 30/

Movement in the southeastern part of the Plateau is restricted to valley flats and established roads. Motor roads are scarce and most of them are oriented in a northwest-southeast direction, but the area is covered with a confusing maze of trails. 5, 6, 30/

Most of the steeper slopes and gorges in eastern Kansu are too rough to be cultivated (see Figure 5). The vegetation cover is composed of thorny shrubs and both tall and short grasses, with the only trees planted around the temples. 4, 6/ The only remnants of a former fairly dense forest of the Loess Plateau are located on the high stony hills and low mountains, generally above the level of the loess deposit. The forest consists of mixed deciduous and coniferous trees and some groves of poplars and willows planted in the flood plains of the rivers. 29/

In the hills and mountains, the difference between south-facing or sunny slopes and north-facing or shady slopes is

pronounced. South-facing slopes are warmer, have a lower percentage of moisture, and are covered by short grass, whereas the cooler north-facing slopes are covered with long grass and brush. Where the loess soil can be cultivated, it is exceptionally productive but highly subject to gullying. Lack of water is the chief factor restricting the extension of agriculture (see Figure 5). 4, 5, 6, 29/

(2) The Yellow River and Huang Shui (Sining) Valleys (Region C2). From its source in the highlands of the Amne Machin and Bayan Kara Shan in eastern Tsinghai, the Yellow River flows southeast, then north and northwest, cutting through the high mountain ranges of the Amne Machin and their continuation, the Ch'in Ling. Upon emerging from the mountains, the river flows east to Lan-chou. West of Lan-chou the Huang Shui enters from the northwest and the Chuang-lan Ho from the north. Beyond Lan-chou the Yellow River flows northeastward and then northwestward before crossing the Kansu border into Inner Mongolia.

In its upper reaches west of the Kansu border, the Yellow River flows through rocky canyons, where the current is very swift and the river consists of a series of rapids. Only the wider alluvial plains at prominent bends or at the tributary junctures are inhabited. 5, 6, 30/

(3) The Wei Ho Valley (Region C3). The Wei Ho originates southeast of Lan-chou, flows southeast to a point near Wu-shan, and then runs east past T'ien-shui to the eastern border of

Kansu. The Wei Ho Valley is an east-west faulted trough consisting of valley lowlands, with narrow cultivated terraces on the steep slopes of the Ch'ing Ling on the south and on low loess-covered hills on the north. In the upper reaches of the Wei, the river flows through loess gorges in which cultivated fields cover the entire floor of the gorge and, in some places, the series of natural terraces that border it. The largest cultivated area in the Wei Ho Valley is the basin of T'ien-shui. 4, 5/

From southwest of Hsi-ning to the northeastern border of Kansu, the character of the major tributary valleys of the Yellow River indicates a transition from forest and steppe to desert. Above the limits of irrigation in the Huang Shui and Ta-t'ung Ho Valleys are short-grass steppes that extend to the crest of the Nan Shan. The valley of the Chuang-lan Ho, which flows from the easternmost range of the Nan Shan southward to the Yellow River valley, is not cultivated continuously but takes on aspects of oasis cultivation. The terrain on both sides of the Yellow River valley from Lan-chou northeastward to the Kansu border reflects the arid, barren, and desiccated nature of the country. 4, 6/

South of Lan-chou the T'ao Ho flows through sand and loess gorges which may be partially wooded. The main areas of cultivation are centered around T'ao-sha, Lin-t'ao, and Min-hsien. 5, 29, 31/

(4) The Koko Nor Basin (Region C4). The Koko Nor or Ch'ing Hai (Green Lake) is the largest lake in West China. It is a

salty lake occupying an eastern extension of the Tsaidam depression between the Nan Shan in the north and the Kun-lun Shan and its eastern extensions, the Amne Machin and Bayan Kara Shan, on the south. The Koko Nor Basin and that of the Kara Nor (Black Lake, a western extension of the Koko Nor) are composed of rolling steppes fringed by broken hill country (Figure 6). North of the Koko Nor Basin the steppe extends toward the crest of the Nan Shan and is broken only by the parallel cultivated valleys of the Ta-t'ung and other rivers. East of Koko Nor the irrigated valleys of the Huang Shui (Sining) and its tributaries are separated from the Koko Nor by extensions of the Nan Shan. The Koko Nor region is in some ways similar to the Tsaidam Basin. The Koko Nor Basin has sand, sandy surfaces, and sand dunes backed by swamp or meadow, which surround the lake. These characteristics are repeated on a somewhat smaller scale in the Kara Nor Basin and in the regions surrounding the northern lakes of the Tsaidam. The Koko Nor Basin, therefore, is a semiarid steppe transition from subhumid upper slopes and irrigated river valleys of the Loess Plateau to the arid desolation of the Tsaidam Desert. 5, 7, 14/

b. The Border Forest Region (Region C5) and Its People

(1) General Characteristics. The Border Forest Region forms the edge of the transition zone from the Outer Plateau to the cultivated land of the Szechwan Basin and eastern Kansu. The altitudinal variations in vegetation in the Border Forest Region are as follows. 32, 33, 34/

A belt of intensive cultivation up to an elevation of 2,000 feet is found in such areas as the Szechwan Basin and some parts of the southern Border Forest Region. The flora is neither rich nor varied, but a large number of winter as well as summer crops are generally grown. Rice, cotton, sugar, maize, tobacco, sweetpotatoes, and legumes are the principal summer crops, whereas pulse, wheat, rape, hemp, Irish potatoes, and cabbage are the usual winter crops.

In the southern part of the Border Forest Region, with elevations between 2,000 and 5,000 feet, 50 percent of the vegetation consists of broad-leaved evergreen trees. Ferns and evergreen shrubs such as rhododendrons, Chinese fir, and cypress comprise the remainder. In this region, cultivation is restricted and the winter crops are of less importance than those of summer. The crops raised are similar to those in the zone below it, with maize displacing rice as the staple crop.

The cool-temperature zone from 5,000 to 10,000 feet is the largest and most important of the altitudinal zones. Here the most characteristic vegetation consists of deciduous flowering trees and shrubs intermixed with conifers and many tall ornamental herbs. One of the most outstanding plants of this zone is the rhododendron. Rhododendrons do not grow abundantly below 8,000 feet, but from there they extend up to the limits of alpine vegetation at about 15,000 feet. The rhododendrons vary from alpine plants only a few inches high to trees 40 feet or more in height and display a wide variety of colors when they bloom in late June.

The narrow belt between 10,000 and 11,500 feet is marked by a striking change in vegetation. The vegetation of this transition zone is mostly of the alpine steppe type, consisting of dwarf rhododendron, scrub, willow, prickly scrub oak, coarse herbs, grasses, and impenetrable thickets of dwarf bamboo. The occasional coniferous forests are composed largely of spruce, silver fir, hemlock, and some pine.

Above 11,500 feet and extending to 16,000 feet or more is the alpine zone (Figure 7). Although the limit of tree growth varies somewhat with rainfall, it is generally between 11,500 and 12,500 feet. The variety and number of herbs in this belt and the intense color of their flowers are the most striking features. The limit of vegetation is about 16,500 feet. A few cushionlike plants are the last to give out; above them are vast moraines and glaciers culminating in perpetual snow. The snowline is at not less than 17,500 feet in this area.

Four areas of the Border Forest Region have distinctive ethnic groups: (1) the Ya area (Chinese), including the watershed of the Ya Ho (Ching-i Chiang), (2) the Ning area (Yi-chia) comprising the drainage basins of the lower Ya-lung Ho, the An-ning Ho, and the Yangtze River tributaries, (3) northwestern Szechwan between the Ya-lung--Ta-tu divide and the Kansu-Szechwan border, consisting of the upper courses of streams flowing into the Szechwan Basin from northwestern

Szechwan, and (4) southern Kansu, consisting chiefly of the upper stream tributaries of the Yellow River and Wei Ho, and a part of eastern Tsinghai east of the Yellow River. 17, 29, 35/

(2) The Ya Area (Chinese). The most important, accessible, and populated area is the Ya, in which almost all of the Chinese settlements in the Border Forest Region are concentrated. The main caravan route westward to the Outer Plateau and Tibet enters the Ya subregion from the Ch'eng-tu area of the Szechwan Basin, and all the major cities of the Border Region are located along this highway -- Ya-an, the gateway to Tibet from the Szechwan Basin; Lu-ting; and Tatsienlu, the center for the Tibetan trade in southern West China (Figure 8). Following the caravan route, Chinese agricultural settlers from Szechwan and the east have infiltrated the river valleys along the highway wherever rice or maize can be grown. The Chinese have established their settlements on the flood plains of the largest streams -- particularly on the insides of meanders or at the junctions of streams -- and farm the low terraces along the river channel or the terraces several hundred feet above the river. Settlements are also located where tributaries have formed alluvial fans that project out into the main stream valley. Although the settlement sites are determined by the availability of arable land, the sizes of the settlements and the distances between them are determined chiefly by the requirements of the road traffic. As a result, a series of small

villages, ranging from 6 to 60 families, are generally located at various journey stages. Market towns, which may also be the headquarters of a Chinese official, are farther apart. 33, 34, 35, 36, 37, 38, 39, 40, 41/

(3) The Ning Area (Yi-chia). The Ning area, south of the Ta-tu Ho, west and north of the Yangtze River and approximately east of the lower Ya-lung Ho, is transitional between the subtropical River Gorges Region in southern Sikang Province, the higher mountainous region of the Ya area, and the forested uplands of northwestern Szechwan.

The less accessible valleys to the south and north of the Ya are inhabited by independent and almost inaccessible aboriginal tribes who have been able to maintain their individual and distinctive ways of life (Figures 9 and 10). The major minority group is composed of Yi-chia (the Chinese word for Lolo), who occupy (1) steep, narrow valleys and mountain slopes away from the main highways in the Ya district; (2) the valleys and mountain slopes of the tributaries of the Yangtze; (3) the lower stretches of the Ya-lung Ho; and (4) to some extent, the less attractive agricultural land of the valleys west of the Ya district. The Independent Lolo, a group of 250,000 to 1,000,000 Yi-chia who have retained their ancient patterns of culture intact, are concentrated almost entirely in the Ta-liang Shan area (see map CIA 12615) 10, 41, 42/

The Yi-chia are reported to occupy an area of 9,000 to 10,000 square miles and to have a population of 1,000,000 to

3,400,000. The villages of the Yi-chia are usually perched precariously on a mountainside and consist of 10 to 50 houses, built of wood or branches and roofed with planks or shingles weighted down with roof stones. A distinctive characteristic of the Yi-chia house is a high, square, earthen enclosing wall with a watch tower two or three stories high in one corner, which may contain the family's arsenal. A typical house consists of three rooms -- a left room, housing the head of the family; a central room with a fireplace, for the family; and a right room, for the slaves and animals. 36, 41, 43/

The most distinctive feature of Yi-chia social organization is a rigid caste system consisting of Black Bones (Black Lolos: aristocrats who constitute from 10 to 25 percent of the population), White Bones (White Lolos), and slaves. The slaves are usually Chinese captured in raids on Chinese settlements. They share with the White Bones all the manual labor and farm work while the Black Bones hunt and engage in interclan feuds. Although the caste system is strong enough to enforce this division of labor, social mobility is relatively high, and White Bones are often treated as a part of Black Bone families. It is even possible for a slave to work up the social ladder to the status of Black Bone. 44, 45/

The Yi-chia families are patrilineal and patrilocal and are related to other families in the clan, each clan having a definite residence area. Marriage is arranged by the parents. The marriage system is clan exogamy but class endogamy, and both polygamy

and a form of levirate are practiced. Interfamily relations are usually unfriendly, and feuding is common. 25, 44, 45/

The Yi-chia are definitely non-Oriental in type. Their straight or slightly wavy hair is of finer texture than that of the Chinese and is frequently molded into a distinctive horn that projects a little on one side of the forehead. The horn is considered inviolable. 46/ Yi-chia men wear wide cotton trousers, a long felt cloak, and a broad, low-crowned turban. The women wear large round caps and long full dresses. 10, 45, 46/

The Yi-chia religion is shamanistic and includes belief in evil spirits but not idol worship. Unlike both the Chinese and the Tibetans the Yi-chia customarily cremate their dead. They do not share Tibetan Lamaism with the sedentary Tibetans who inhabit the gorge valleys to the west of their territory. 10, 46/

For the most part the Yi-chia are governed by their own laws and pay little attention to Chinese administration except in areas on the periphery of the Lololand, where the Chinese are numerically stronger and are in control. Chinese control is almost completely lacking within the area of the Independent Lolos. 10, 35/

The staples of Yi-chia diet reflect the rugged mountainous terrain in which they live. Their main items of food are buckwheat, corn, oats, and potatoes, but some rice is grown on some of the few river flood plains occupied by the Yi-chia. They usually raise chickens, cattle, pigs, and ponies and practice a modified

form of shifting cultivation on the middle slopes; forested lands are slashed and burned, and then planted and cultivated with a hoe without plowing or manuring. On the few relatively level fields on the lower slopes, the plow is used and some rice is grown. Wild game is hunted on the higher slopes. 10, 35, 36, 44, 45, 46/

(4) Northwestern Szechwan (Ch'iang and Gyarong).

North of the Ya district is another relatively inaccessible area where independent aboriginal tribes inhabit the deep mountain valleys. This section of the Border Forest Region in northwestern Szechwan extends from the foothills along the Szechwan Basin to the Chiung-lai Shan in the northwest, the dividing range between the watershed of the Min Chiang, flowing into the Szechwan Basin, and the Yellow River, flowing generally northwest into eastern Tsinghai. It is inhabited by the Ch'iang and the Gyarong, semi-independent aboriginal tribes, who have retreated to the mountains before the encroaching Chinese. This area, like Lololand, has been a refuge for guerrillas and others fleeing from the established authority of China.

Although the terrain nearest the Szechwan Basin consists of rugged mountains and gorges with few flat or gently sloping surfaces, the western part of the area has many of the characteristics of the Outer Plateau, to which it is transitional. Since routes of transportation follow the river valleys, most of which have walls from 500 to 1,500 feet or more in height, the country appears to be very rugged. Most of this lower gorge area is deeply eroded, and

rock outcrops interrupt the few existing flood plains and alluvial terraces. The villages and cultivated fields are largely located above the steep river gorges on gentler glacial-till terraces 6,000 to 8,000 feet in elevation. Above them, from 8,000 to 12,000 feet, the slopes again become steep and forests appear. The highest elevations have alpine vegetation on gravel or boulder-strewn slopes. 29, 33, 35, 47, 48, 49/

These altitudinal zones reflect rain-shadow conditions. Slopes below 6,000 feet are arid, barren, and covered only with a thin mantle of scrub. From 6,000 to 8,000 feet, slopes can be cultivated without irrigation, but agriculture is precarious. The major crops grown are corn, beans, and wheat, with barley, buckwheat, and potatoes near the upper limits. Above this, where moisture is available but the growing season is too short for crop production, are grasslands devoted chiefly to grazing. Approximately 5 percent of the terrain is valley bottoms or alluvial terraces, 50 percent gentle middle slopes, 25 percent high rolling plains or terraces, and the rest steep slopes and eroded land. 50, 51/

Although a number of tribes inhabit the area of northwestern Szechwan, the Ch'iang and the Gyarong are the chief groups. Some Chinese settlers are found in the river valleys wherever the flood-plain terraces are extensive enough to permit growing crops of rice and maize, but the aboriginal population is concentrated on the middle slopes. The approximate extent of Ch'iang and Gyarong groups is indicated on the accompanying map. 52, 53, 54/

Aboriginal groups in northwestern Szechwan locate their settlements on the semiarid middle slopes between 6,000 and 8,000 feet, and the villages are connected by a network of trails crossing the uplands. 54/

Both the Ch'iang and the Gyarong live in fortified villages or on farms. The Gyarong have settlements of 100 or more families, located on bluffs or perched on steep mountainsides in easily defensible positions. A Gyarong settlement can be distinguished by the presence of one or more tall square or hexagonal towers, 60 to 80 feet high, which serve as storehouses, watchtowers, or fortified retreats in times of tribal warfare. Other identifying features include white diagonal lines, swastikas, crosses, and other devices painted on the walls; and by symbols of the globe, turned crescent, and swastika displayed along the edges of the roofs of the houses or other structures. Like those of the Ch'iang, the flat-roofed, almost square houses of the Gyarong are built of rough stones plastered together with mud. The houses of both tribes range up to three or four stories high; the status of the inhabitants can usually be determined by the number of stories. The ground floor consists of a courtyard surrounded by a sheep and cattle pen, a kitchen, and usually a guest room. The walls may contain loopholes or narrow latticed windows. The roof is used for many religious, social, and agricultural purposes. The houses may be build closely together with one or more towers rising above flat roofs. 33, 44, 45, 46/

Groups living below 8,000 feet grow corn as their staple food, whereas those above 8,000 feet depend upon barley, oats, and potatoes. Both groups keep sheep, cattle, ponies, and goats. 46, 54/

The Gyarong carry on a trade in horses with the Chinese, while the Ch'iang sell agricultural produce in the markets of the neighboring Chinese villages. The Gyarong are highly skilled masons and gun- and swordsmiths. 33, 46, 53/

The men and women of both groups wear long robes made of wool or other materials. They like to trim their robes with bright red borders or brightly colored belts. Ch'iang people either go barefooted or wear straw sandals; the Gyarong wear cloth shoes. The women are distinguished chiefly by their elaborately combed headdresses decorated with silver and red coral. The hair ornaments, together with bangles and earrings inlaid with silver, turquoise, and coral, represent all the worldly wealth of the wearers. 33, 53/

Communication between the tribal villages of northwestern Szechwan is over mountain trails that connect with the roads following the major streams. Trails or roads cross the smaller streams or torrents by semicantilever or suspension bridges constructed of bamboo cables. Cable or rope bridges are common throughout this region, especially in the southern part of West China. A simpler but equally effective crossing is often made by means of bamboo rope or cable streched across the stream from a higher to a lower point (Figure 11). A person crossing a cable bridge establishes

himself in a primitive breeches buoy or cradle attached to the cable and jumps off. If his speed down the inclined cable is sufficient, he will be carried well up the opposite side. Whatever the remaining distance to the top, he must cover it by hauling himself up hand over hand. Reportedly, this method is efficient and safe as long as the individual keeps a cool head and the ropes do not break. 33, 47/ Other streams are forded by broad, open, skin coracles made of cattle hide stretched over ribs of tough wood. 33/

The social organization of the tribes of northwestern Szechwan is loose, with no definite tribes and chieftans. Since the women are almost as important as the men in supporting the family, many tribes have women rulers. Where Lamaism predominates, the men spend considerable time in prayer and meditation, leaving the women to cultivate the land, tend the cattle, and rule the people. It is to the women that requests for favors must be made when entering a home. 33, 45, 46, 53, 54/

(5) Southern Kansu (Kham Tibetans). The fourth area of the Border Forest Region is transitional from the Loess Plateau to the upland grasslands at the headwaters of the T'ao and the tributaries of the Yellow River in Tsinghai Province. The region connects the Outer Plateau proper with the steppe lands of the Koko Nor and Tsaidam Basins. Topographically, it resembles northwestern Szechwan, but the grasslands are more extensive and the forests are restricted to the higher mountain ranges and the fringes of the major

river valleys. Kham Tibetans have settled in the irrigable stretches of river valleys; the plateau grasslands are inhabited by the Tsang Tibetans (see Figure 3). 29, 55/ Like the Ya area and the valleys of the Min Chiang, these river valleys are areas of culture contact between the agricultural Chinese in the east and the sedentary Tibetans in the west.

Farming is restricted to altitudes of 8,000 to 9,000 feet, and the principal crops are barley, soybeans, peas, and some wheat. 4, 6, 29/ According to Ekvall:

> In the first village /up the Tao Ho/ Chinese agriculture is dominant, and there are only vague traces of Tibetan influence, and as one moves on Tibetan influence increases to a point where the two cultures are evenly balanced; and from there on Tibetan influence increases until, in the farthest villages, the Tibetan aspect of life and manner are virtually unadulterated. 1/

It is also suggested that the infiltration of Chinese into the villages of sedentary Tibetans results first in the disintegration of Tibetan community life and later in the mutual acculturation of both Tibetan and Chinese. The Buddhism of the Chinese and the Lamaism of the Tibetans, through mutual tolerance, have no fundamental conflicts. There are, however, differences in social organization. The Chinese village is integrated into the hsien and responsible to it, whereas the Tibetan village is more autonomous and communal in nature. Organization and function are probably the most important differences between Chinese and Tibetan villages. Chinese villages have compact family units as well as a clan system, whereas

the Tibetans have no clearly defined clan organization and the family is a much looser group. The Chinese village organization allows the individual much freedom of action, whereas the individuals of a Tibetan village are restricted by communal activity. 1, 4, 10/

It has been suggested that Chinese migration into the Tibetan farming areas is the result not only of population pressure in China Proper, but also of a declining Tibetan population, which consequently offers little resistance. The agnostic, apathetic, and antisocial philosophy of the Tibetans and the religious institution of monasticism are suggested as possible reasons for population decline. One of every three males becomes a monk, thus throwing the sex ratio and marriage system out of balance. 1, 10/

The ways in which the Chinese have infiltrated and integrated themselves with the Tibetans include (1) marriage between Chinese men and Tibetan women, (2) adoption of Chinese children by Tibetans, (3) the superior skill of the Chinese in handicraft, commercial, and administrative activities, and (4) the readiness of the Chinese to adopt Tibetan clothing, modes of living, and language. The infiltration of the Chinese is facilitated further by the custom of taking asylum in Tibetan country. Since Tibetan villages have a more communal organization, they are better able to resist armed aggression and defend themselves than are Chinese villages. Furthermore, the Tibetan "guest-host" system affords the right of refuge to outsiders, and, in most recent Moslem rebellions, many Chinese were able to obtain refuge in Tibetan villages. 1, 4, 10, 12/

As a result, ill feeling between the two groups, such as exists between Moslems and Chinese, is seldom encountered, even though the infiltration of Chinese into Tibetan villages may result in the disintegration of Tibetan communal life and the acculturation of Tibetans into Chinese life. Nevertheless, the Chinese attitude of superiority arouses Tibetan resentment. This attitude, reinforced by the interference of the Chinese Communists with Lamaism, could result in active resistance by the Tibetans.

Figure 1. Hui people (Chinese-speaking Moslems) of a Moslem village in the Loess Plateau Region (Region C-1) of eastern Kansu.

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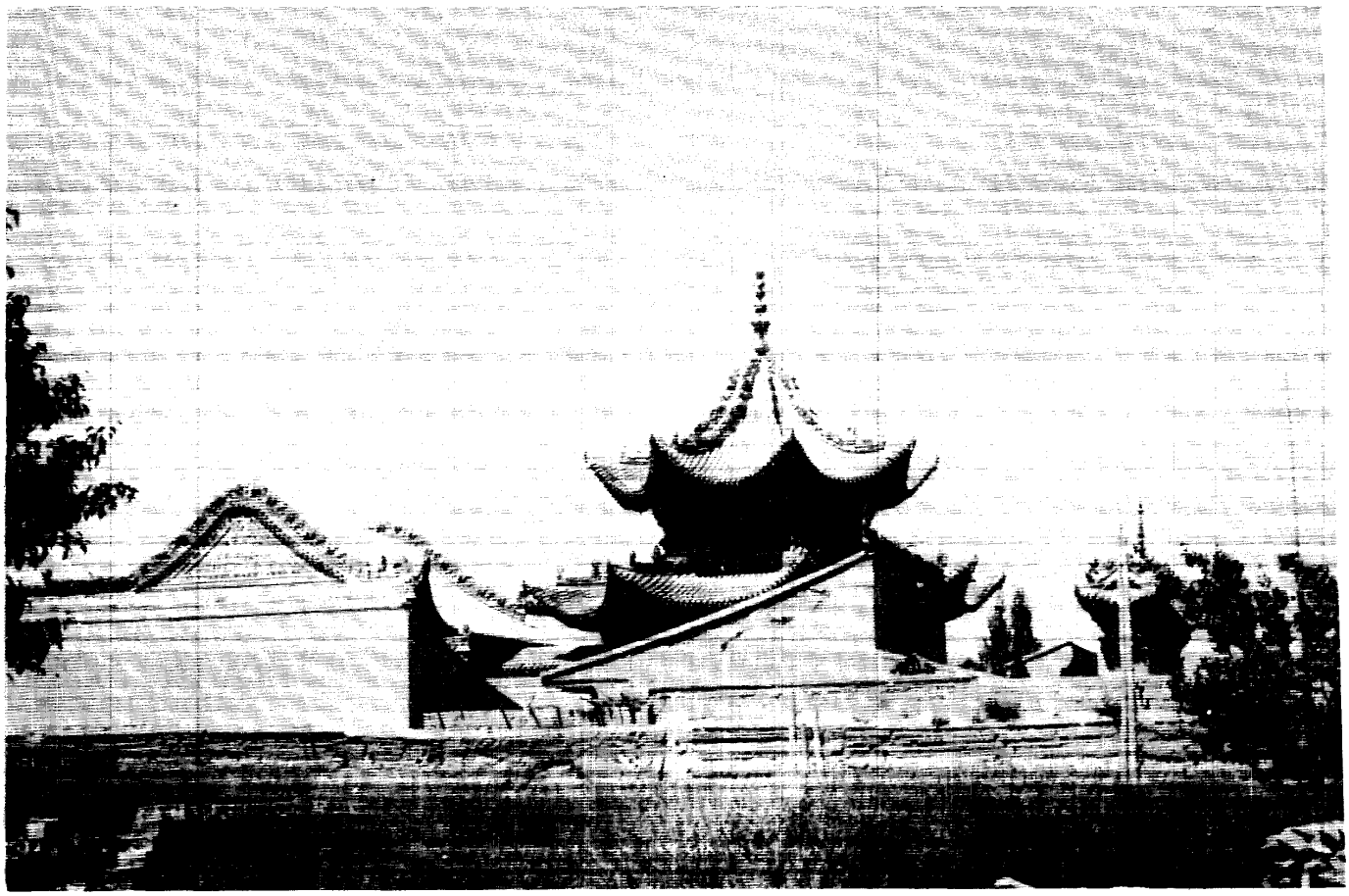

Figure 2. A Moslem mosque in a suburb of Lan-chou. The Moslem crescent is faintly discernible atop the pagodalike minaret.

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Figure 3. Members of a Tsang Tibetan caravan gather around a "kettle" with their tsamba bowls. Note the high-crowned and broad-brimmed hats and typical Tibetan sheepskin coats.

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Figure 4. A Golok lama from the Central Mountain Region (Region E-2).

Figure 5. A terraced and eroded valley in the Loess Plateau Region (Region C-1) in southeastern Kansu. An agricultural village can be seen at the left.

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Figure 6. Short bunch-grass vegetation predominates in the Tsaidam Steppe Region (Region D-5), south of Koko Nor.

Figure 7. A high mountain valley in southern Sikang, 14,400 feet in elevation, covered with alpine sod, flowers, and dwarfed shrubs (Region C-5).

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Figure 8. The southern part of Tatsienlu (K'ang-ting), the trade center of southern Sikang on the Gya-Lam or China Road (Region C-5).

Figure 9. Hsi-fan peasants in the Yi-chia territory of southern Sikang (Region C-5).

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Figure 10. An aboriginal village (elevation 12,500 feet) overlooking the Ya-lung River in southern Sikang (Region C-5). Note the grain-drying racks (left) and stacked firewood (left center).

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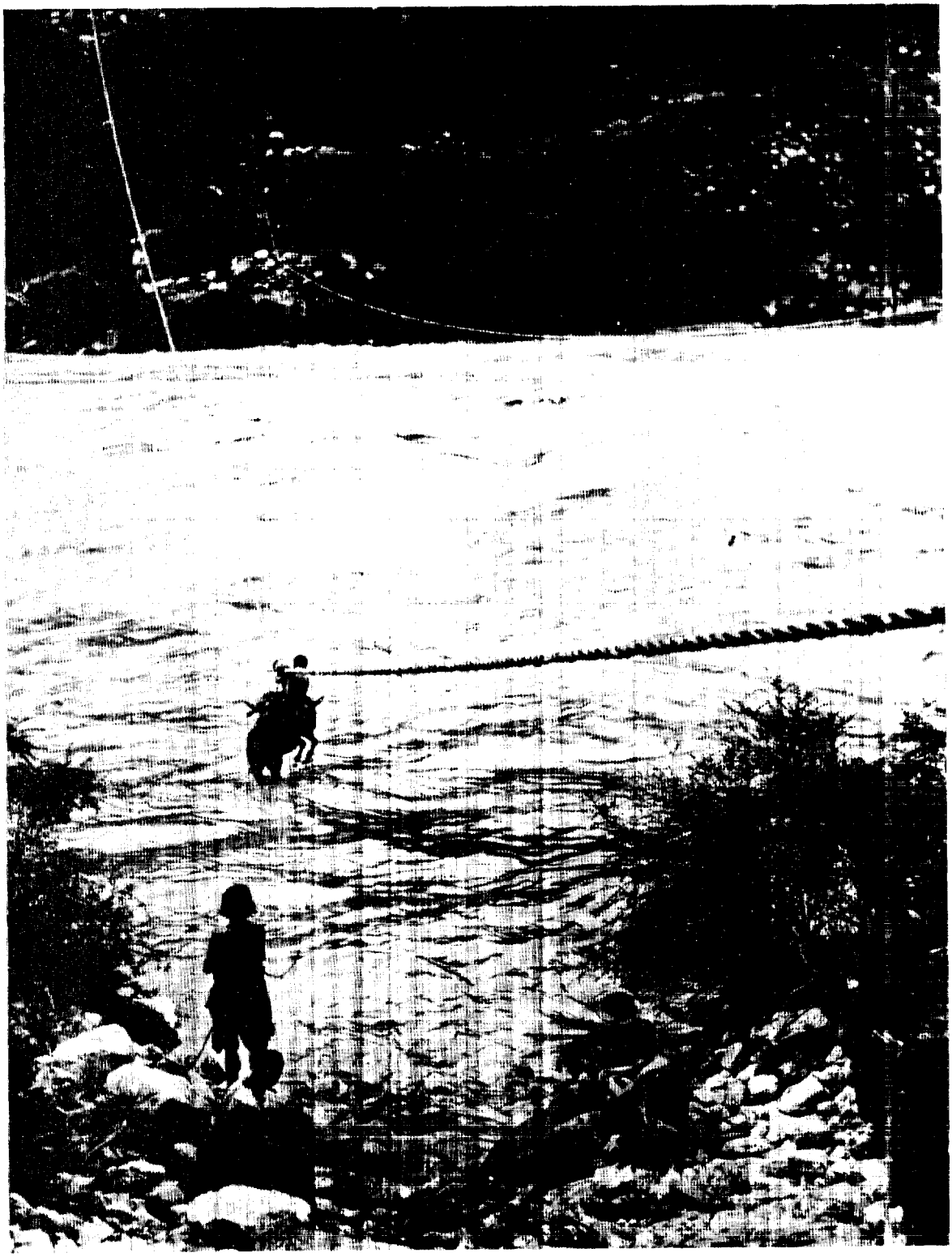

Figure 11. A horse and man, launched from the opposite bank, slide down a rope bridge across the Ya-lung River in southern Sikang (Region C-5).

III. The High Steppes of Tsang Tibet

A. The Tsaidam Basin (Region D)

1. General Characteristics

The Tsaidam Basin, a great interior drainage basin lying south of the Nan Shan, east of the Astin Tagh, and north of the Kun-lung Ranges, links the Koko Nor Basin with the Tarim Basin of Sinkiang to the west. Although it is nearly empty of people, except for the Tsaidam Mongols who graze their herds on its northern, eastern, and southern grassland fringes, the Tsaidam Basin is a natural corridor through which passes the second most important caravan route to the west (see Figure 6).

The Tsaidam Basin actually is a terrace 8,000 to 10,000 feet in elevation lying between the 16,000-foot Chang Thang to the south and the 3,000-foot Mongolian Plateau to the north. In general, the basin is roughly oval in shape, with extensions to the north, west, and northeast where streams flow into the basin and terminate in salt lakes. The Tsaidam probably consists of a large number of distinct interior drainage basins, separated by very slight land swells.

2. Geographic Subdivisions

a. The Tsaidam Salt Marsh (Region D1)

Several areas of salt marsh occur in the Tsaidam Basin. The largest occupies the southern part of the basin, just north of the Kun-lun Shan. Other areas of salt marsh occur in the vicinity of terminal lakes -- Ghaz Kul, in the southwestern corner; Pu-len-ken Hu (Bulungin Nor) and Su-Kan Hu (Sukhain Nor) to the north; and

the Ma-k'ai, Ikhe Nor, Pa-ka-ch'ai-ta-mu Hu (Baga Nor), and Kurlik Nor in the northeast.

The terrain characteristics of the larger Tsaidam salt swamp and the salt swamps located around the peripheral terminal lakes have distinct differences. Both support either true halophytic vegetation (plants containing a high percentage of salt) or salt-tolerant plants that grow in saline soils. In the larger swamp area, however, plants are usually limited to the river channels that have been eroded below the level of the basin or to the northern border of the swamp where it impinges on the foothills of the Kun-lun. Elsewhere the terrain consists of shor, dark-gray stratified silty sand, usually covered by a crust of salt up to 1-1/2 feet thick. In some areas, however, the salt crust (which is always covered with a thin coating of dust) is thin and underlain by soft, swampy soil. Such areas are untrafficable, since the crust may break under the weight of a man and a horse and drop them several feet in the swamp. An unusual characteristic of the salt-encrusted silt is the fresh or nearly fresh subsoil water in some places. Such areas can be distinguished by a dense growth of reeds and tamarisk. 5, 7, 14, 16, 18, 20, 29/

The variations in vegetation around the terminal lakes depend upon the salinity of their waters. For example, Kurlik Nor is fed by mountain streams and in turn feeds T'o-so Hu (Tossun Nor); the former is fresh and is surrounded by a dense growth of reeds and grass, whereas the latter is salty and has halophytic reeds, grasses, and brush on its shores. Several types of vegetation cover are found

around Su-kan Hu (Sukhain Nor) and Pu-lun-ken Hu (Bulungin Nor) in the Sirtun Plain. They include short steppe grass on the higher ground above the lakes; white salty shor, with halophytic tussocks of tall grass; marshy land; salt bogs; sand with sparse grass cover; and brush-covered ground. 20, 29, 56/

The two smaller areas between Kurlik Nor and Su-kan Hu (Sukhain Nor), indicated on the map as D2, have the same characteristics. 20, 56/

b. The Southern Corridor (Region D2)

The narrow belt of vegetation that borders the Tsaidam swamp on the south varies from 1 to 20 kilometers in width and consists of two or three distinct vegetative zones. On the lowest level, next to the swamp, is a zone of tamarisk, often so dense that it becomes a jungle, topped by a narrow belt of tamarisk cones and dead tamarisks. Tamarisk cones are hummocks, often 50 feet high, formed by sand collecting around the root systems of dead tamarisks. Rising above the belt of tamarisk cones is the gravel desert piedmont or sai, which in some places may be covered by sand dunes for long distances. The sai is a comparatively narrow belt with some vegetation and lies between the mountains and the swamp. This belt is the route of caravans traveling between the Koko Nor and the Tarim Basin on the west and Lhasa on the south. Springs occur within the belt of vegetation after emerging from the gravel sai and before disappearing into the Tsaidam swamp. 18, 27, 56, 57, 58/

c. The Tsaidam Gravel and Salt Deserts (Region D3)

These regions, occupying the greater part of the northern part of the Tsaidam Basin, are mainly unexplored. According to Hedin, 27/ the area consists mainly of the gravel piedmont slopes of the Astin Tagh, almost completely without vegetation. On the extreme western edge are flat, shallow, self-contained basins with hard, sterile, dry-clay surfaces covered with fine powdery material. Above the basins, the slopes of the foothills of the mountains are mantled with gravel. 14, 18, 27, 29/

The same author describes another part of the region as looking "as if it had formerly been a barren salt marsh, and as if the saliferous mud, when it dried, had expanded and then shrivelled like the skin of a withered apple." 27/ Some of the shor consisted of "ridges three feet high separated by hollows 9 feet across which were sprinkled with white salt and sharp-edged crystals of gypsum which wounded the camel's feet," or of hollow salt-encrusted tables with hard, sharp outcropping edges "sometimes almost horizontal, at other times sticking straight up." 27/

d. The Tsaidam Sand Desert (Region D4)

Although small areas of sandy plains and sand dunes occur in the Southern Corridor (Region D2) and in the steppe areas of the Tsaidam (Region D5), the most extensive areas of sand plains and drifted dunes are in the northwestern section of the Tsaidam Basin (Region D4). No accounts of the character of this region are available, since it is almost completely unexplored, and only the approximate extent of the region is known.

e. The Tsaidam Steppe (Region D5)

South of the Koko Nor Basin is a steppe region that constitutes a continuation of the Tsaidam Basin (see Figure 6). The Tsaidam Steppe, which consists of mixed short and tall grasses on the lower slopes and in the valleys, is differentiated from the Border Forest Region by its regional slope -- northwest towards the Tsaidam drainage basin -- and by the more xerophytic character of its vegetation. In addition to the fairly continuous cover of short and tall grasses, the shaded mountain slopes have a dense growth of bushes at the middle elevation; only the highest slopes have a cover of poplar, spruce, and fir. Forests are most common on the sunny slopes, since the shady slopes and the highest peaks are usually too cold for trees of any kind. Areas of sand flats and sand dunes occupy some of the lower valleys adjacent to the Tsaidam Basin. 5, 14, 20, 27, 29, 56, 57, 58, 59/

3. The Tsaidam Mongols

The inhospitable basin of the Tsaidam has been inhabited by the Mongols of the Khoshot tribe since the seventeenth century, when the confederacy of the Oirat tribes moved southward from Dzungaria to the region around Koko Nor. Although information on the Mongols is scanty, there are 29 Mongol banners in Tsinghai, each governed by a local chief. 58, 60, 61/ The banners are organized into two leagues: the Koko Nor East Wing League with 13 banners and the Koko Nor West Wing League with 16 banners. 61/ In 1927, the most prosperous and numerous of the Tsaidam Mongols were the Kurlik Khoshots, who occupy most of the grazing lands in the high valleys of the Nan Shan almost

as far as the Kansu Corridor, the pastures around the salt lakes of Ikhe Nor, Pa-ka-ch'ai-ta-mu Hu (Baga Nor), and Kurlik Nor, and grazing lands in the vicinity of Pu-lun-ken Hu (Bulungin Nor) in northern Tsaidam. The Kuket Khoshots occupied the grazing lands to the east of the Kurlik Khoshots, and the Barun Khoshots held the grassland steppes in the vicinity of Tu-lun west of Koko Nor. South of the Tsaidam salt swamp, the grazing grounds of the Taichinar Khoshots extended along the southern corridor of the Tsaidam (see map CIA 12615) and the northern foothills of the Kun-lun Shan. 28, 60/ The areas of concentration probably remain substantially the same today.

The Tsaidam Mongols are primarily livestock breeders. Each year, horses, camels, and sheep are sold to the Moslem and Chinese traders who journey into the Tsaidam. The Tsaidam horse is a well-built animal, but it has fragile hoofs that are suited only to the soft saline ground of the Tsaidam Basin. The Tsaidam camel, on the other hand, is capable of withstanding the rarefied air of the mountains and is frequently used on the northern trade route to Tibet, even though it has a slighter build and smaller carrying capacity than the larger Mongolian camels. 58, 60/

Moslem and Chinese traders visit the Mongol encampments of the Tsaidam during the summer months, coming from their headquarters in eastern Kansu. Some trade is also carried on by the Tsaidam Mongols when they attend fairs and religious festivals at Kumbum Monastery in the autumn. 1, 14, 60/

Around Kurlik Nor and along the Southern Corridor (Region D2), some of the land is cultivated by Mongols or by Chinese who lease the

land from the Mongols. The chief crop is barley. For the most part, however, the Tsaidam Mongols depend upon trading caravans for their annual supply of grain or obtain it from the sedentary Tibetans. 14, 60/

The Tsaidam Mongols live in circular tents (yurts) of wool felt, which may have two-leaf doors hung on a wooden frame that makes a high threshold. Sheepskin curtains are hung both inside and outside the doors to keep out the cold wind and sand. Both these curtains must be opened from the left, since entrance from the right would bring the visitor into the wife's quarters, which is strictly forbidden. Visitors should also avoid stepping on the threshold (bad luck) and should avoid contact with the women and children.

Inside the yurt, opposite and slightly to the left of the entrance, is a Buddhist altar. In the center of the room is a fire pit, and the floor, made of pounded earth, is usually covered with sheets of felt matting or sheepskins. The master's quarters are usually beyond and to the left of the fire pit. On the right side of the tent there may be a wooden rack for kitchen utensils, and beside the rack a crude churn for making butter-tea. The remainder of the yurt's furnishings consist of chests of drawers and other household paraphernalia. The size and furnishings of Mongol yurts indicate the prosperity of the owners. 14, 60, 61/

The Mongol men wear a cloth shirt trimmed with fur, trousers of blue or brown, and a large heavy coat trimmed with leopard or lynx fur. Distinguishing features of the Mongol costume are the leather boots, numerous heavy charm boxes hung around the neck, and the small

felt hat edged with a narrow strip of silk. The women wear the same type of large coat, generally trimmed with their favorite color -- green -- and with pieces of red cloth sewn on the shoulders. Like other nomadic women, they decorate their headdress with pieces of turquoise and coins, and wear coral necklaces and charm boxes. 7, 14, 60, 61, 62/

B. The Central Mountain Region (Region E)

1. General Characteristics

The Kun-lun (Region E1) and Amne Machin Mountain systems (Region E2) constitute an almost continuous mountain barrier that extends across the central part of West China from west to east. Their effectiveness as a barrier to communications is modified by three factors: (1) the barrier is not as high nor as difficult to penetrate as the Nan Shan, since it is broken by rivers that flow through it -- such as the Chulak Akkan in the Kun-lun Shan and the Nai-ch'i-kuo-lo Ho, which forms the boundary between the Kun-lun and the Amne Machin; (2) the mountain barrier is penetrated by the valley of the Yellow River on the northeast and includes, in the east, the steppe basin in the headwaters area of the Yellow River; and (3) several routes of travel cross the eastern part of the barrier, the western part being largely uninhabited. The Central Mountain Region, nevertheless, constitutes a barrier between culture groups almost equal to the Nan Shan. In the south are the Tsang and Kham Tibetans (see p. 74 ff. for discussion of the Tsang Tibetans and p. 106 ff., of the Kham Tibetans), while north of the mountains, in the Tsaidam Basin, are the nomadic Mongols.

Although the Kun-lun Shan and the Amne Machin and Bayan Kara Shan are differentiated on the accompanying map, they are more or less continuous and differ only in structure. The Kun-lun Shan (Region E1) is a series of discontinuous mountain chains having an average elevation of about 20,000 feet -- only 4,000 feet above the general level of the Chang Thang but 10,000 to 12,000 feet above the Tsaidam Basin. Each mountain chain consists of a succession of snowy domes with deeply ravined slopes. The domes are separated by high gravel plains containing large areas of black mud bogs. The passes between the Chang Thang and the Tsaidam Basin are relatively low but are difficult because of the violent storms characteristic of the Kun-lun and the Chang Thang. (For further discussion of terrain characteristics of this area, see the terrain description of the Chang Thang, Region F1, p. 68 ff.) 14, 27, 35, 58, 60/

In the east, in the vicinity of the Nai-chi-kuo-lo Ho, the Kun-lun Ranges merge into a confused mountain area consisting of the Amne Machin Ranges, the Bayan Kara Shan, and the headwaters area of the Yellow River. The mountains rise to elevations of up to 22,000 feet in the central Amne Machin and consist of massifs separated by rolling plains and broken hill country (Figure 12). The plains are intersected by deep troughlike valleys and gorges; steppe vegetation is characteristic in the eastern valleys. In other areas, forests with altitudinal characteristics as described for Region C5 prevail. Movement is relatively easy in the trough valleys, and the passes that cross the main ranges are low. 27, 35, 36, 56, 57, 58, 60/

2. The Goloks

The Goloks, who inhabit the Central Mountain Region, are a heterogeneous ethnic group composed of Mongols, Tsang Tibetans, Kham Tibetans, and aboriginal tribesman (see Figure 4). It has been suggested that they are malcontents and criminals who fled to the mountainous regions of the Yellow River headwaters and were absorbed by the local mountain tribes. They have been able to maintain their independence from the Tsinghai and Sikang governments and have long resisted military efforts to subdue them.

The Goloks make a specialty of raiding caravans traveling on the Hsi-ning--Lhasa and the Tsaidam-Lhasa caravan routes, and caravans crossing their territory usually band together for protection. The Goloks indiscriminately raid the settlements of the Tsaidam Mongols to the north and the nomadic encampments of the Tsang Tibetans in the south. There is little information on their customs or social organization, but their way of life apparently resembles that of the Tsang Tibetans (Figure 13). 60, 63/

C. The Tibetan Plateau (Region F)

1. The Chang Thang (Region F1)

The Chang Thang is the top rung among the terrain regions of West China. It lies at an average elevation of 16,000 feet and consists of open gravel plains broken by low, rugged mountains that rise from 900 to 1,300 feet above the general level (Figure 14). In all directions the country falls away from this high plateau that covers the northern half of Tibet and most of western Sikang. To the south

is the Nyenchhen Thanglha Range and beyond that the Himalayas, with the Tsangpo Basin lying between them. North of the Chang Thang, across the bordering ranges of the Kun-lun Shan, lies the Tsaidam Basin, a step-down from 16,000 feet to an average of 9,000 feet. To the west the drop is even greater, with the Tarim Basin of Sinkiang lying between 2,000 and 6,000 feet below the Kun-lun and Astin Tagh Ranges. It is only to the east that the boundary of the high plateau is not clearly defined by physical features, but it lies somewhere in the vicinity of the boundary shown on the accompanying map. This is the headwaters area of the Yangtze, the Mekong, and the Salween, which have their sources in marshy plains spread over enormous areas. West of the boundary line shown on the map, drainage is generally toward the interior and includes countless salt or brackish lakes; east of the line the lakes tend to be strung out like beads on a string and, being located on the headwaters of great rivers, may have fresh water. Because there is exterior drainage, lakes are also fewer east of the boundary. Nevertheless, the dividing line between the Chang Thang and the Outer Plateau (Region F2) is more or less theoretical. There is much of the Chang Thang type of scenery in the Outer Plateau, and the streams that rise on the saucer-shaped rim of the Chang Thang flow for hundreds of miles in comparatively broad, shallow valleys (see figure 12) before they begin to cut their characteristic V-shaped valleys into the Outer Plateau. 27, 36, 56, 60, 64/

The Chang Thang, as a region, is a vast undulating saucer-shaped expanse in which low, parallel rocky ranges of mountains rising only a little above the general level of the plateau are separated by wide, shallow troughs consisting of gravel-covered surfaces and lacustrine plains with salt or brackish lakes in their lowest parts. The general trend of mountain ranges and trough valleys is east-west, and most of the lakes of the Chang Thang have a long east-west axis parallel to the ranges. 27, 56, 64/

The severe climate of the Chang Thang appears to be the controlling influence on vegetation and local landforms. The winters are extremely severe, and even in summer (June to September) the temperatures are only a degree or two above freezing. Between November and March the temperatures are almost continuously below freezing, and severe frost is likely to occur on most nights even during the summer. Although the winter snowfall is believed to be considerable, there are only occasional showers in the summer. Since the high plateau region is sheltered by the Himalayas from the westerly monsoonal winds of Southeast Asia, the yearly total precipitation is low. Probably the most distinctive features of Chang Thang weather are the northwest or west winds of winter and spring, which may exceed gale force. These winds, together with the low precipitation, have the effect of reducing the Chang Thang to a cold desert in which sand dunes may be found in association with alpine lichens, mosses, and grasses. 27, 36, 51, 60, 64/

Botanically, the Chang Thang is a desert with scanty vegetation consisting of grasses, annual herbs, and some cushion plants that are able to withstand the intense cold and dryness of the atmosphere. There are no woody plants. Although the grass appears to be very sparse, the Chang Thang supports great herds of yaks (see figure 12) and antelope, as well as gazelles, marmots, and hares. For the most part, the grazing land is located around the margins of the marshes and lakes. On the slopes above the grass, scattered patches of moss are the only vegetation. Mountain flanks and adjacent plains are covered with gullied schist debris. 27, 36, 56, 60/

2. The Outer Plateau (Region F2)

The largest and probably the most economically important of the terrain regions of West China is the Outer Plateau, Region F2. It consists of great plains lying at an average elevation of 13,000 to 15,000 feet and contains the headwaters of all the major rivers of West China -- the Yangtze, the Mekong, the Salween, the Yalung, and the Yellow. The plains are generally covered with steppe vegetation, are broken by low mountains and broad valleys, and comprise the best grazing lands in West China (Figure 15). 36, 56/

Although the Outer Plateau can be described as a grassland plateau, its characteristics vary in relation to proximity to the surrounding regions. Thus the Outer Plateau has many of the terrain characteristics of the Chang Thang (Region F1) in the west, of the Gorges Region (Region G) in the southeast, and of the Border Forest Region (Region C5) in the northeast.

In the west the terrain boundary between the Outer Plateau and the Chang Thang is particularly indistinct. Somewhere in the area indicated by the line between Regions F1 and F2 on the map, the slope of the Chang Thang to the southeast increases and the water begins to drain away from marshy plains into intricate, intertwining, shallow channels that form the headwaters of the Salween, Mekong, and Yangtze Rivers. Even to the east beyond this divide, there is little perceptible change in the land forms or the vegetation for some distance. Eastward, the mountain ranges that give the plateau an east-west alignment gradually become more clearly defined and begin to trend southeastward, the salty terminal lakes become fewer and fresh lakes more common, and the broad shallow valleys narrow and deepen as the rivers cut more and more into the surface of the plateau (Figure 16). Here the alpine flora that is so characteristic of the Chang Thang is confined to the higher mountain ranges and is gradually replaced by steppe grass on the lower slopes (compare Figures 15 and 16). Along the water courses, willow, poplar, juniper scrub, and other woody plants begin to occur sparingly and, as the rivers deepen their valleys and swing south toward the Yünnan border, the semidesert and alpine flora of the Outer Plateau is replaced by the forest flora of the Gorges Region. Thus from northwest to southeast, as the general level of the Outer Plateau descends from the cold and arid Chang Thang to the river gorges with their moist and warm air, the plateau passes through a transition from cold dry steppe, through cool humid steppe, to the coniferous forest (Regions

C5 and G1) which marks the boundary between the Outer Plateau and the River Gorges Region. 36, 56, 58, 64, 65/

A similar, but less clearly defined, transition occurs in the northeast. The northeastern Outer Plateau is a region with great north-south parallel ranges separating deep, gorgelike valleys. The grasslands are confined to smaller plateaus and to the headwater basins of the larger rivers (see Figure 7). The valleys are not as heavily forested here as in the River Gorges Region nor as xerophytic as in the river valleys in Kansu. On approaching the northern part of the River Gorges Region (Region G), however, the Outer Plateau takes on more and more of the characteristics of the humid-gorge country. The rolling grassland plains between the rivers first broaden and then narrow, and the vegetation becomes more varied and luxuriant. 29, 36, 56, 57, 59, 66, 67/

The climate of the Outer Plateau passes through a transition from the arctic climate of the Chang Thang in the northwest to the more humid climate of the far south. In the northwest -- in the areas of the headwaters of the Salween, Mekong, and Yangtze -- the climate of the Outer Plateau is very similar to that of the Chang Thang. Generally it is intensely cold on the high uplands above 15,000 feet during the winter season (November to March), but in contrast to that in the Chang Thang, the snowfall is comparatively light except on the higher and more exposed mountain slopes. Precipitation in the eastern part of the Outer Plateau is heaviest during the summer and spring, contrasting with the scant summer precipitation of the Chang Thang and the adjacent parts

of the Outer Plateau. In the southern Outer Plateau, above 17,000 to 18,000 feet, precipitation is in the form of snow; below that level the precipitation is usually in the form of summer afternoon or evening thundershowers, occasionally with hail. 68, 69/

3. The Tsang Tibetans of the Plateaus

The entire southern and western part of West China is inhabited by people who, though sharing a common language and religion, are actually two distinct ethnic groups distinguished by differences in material culture, customs, mode of life, attitudes, and norms. These are the Tsang Tibetans, the nomadic herdsmen of the Outer Plateau, and the Kham Tibetans (see p. 86), sedentary agriculturists of the River Gorges Region (Region G).

Culturally there is an altitudinal distinction between the two groups. On the rolling steppe country of the Outer Plateau are the drok-pa (drok, meaning open country, steppe, free from forest and not precipitous; pa, a particle signifying relationship or participation), or "people of the black tents," who lead a nomadic pastoral life. To the southeast, as the rivers deepen, the elevations decrease, steep canyons with partially forested walls develop, agriculture takes the place of cattle and sheep raising, and the transition from the regions of the nomads to the country of the sedentary farmers, or rong-pa (rong, cultivated valley), is made. The latter are known as "the people of the earthen houses." 1, 15, 70/

The nomadic Tibetan encampment, like the village of the sedentary Tibetans, is the basic unit of social organization. Although

the camp is shifted from site to site, the ring of nomad tents, called ru-sher or de-wa, remains a cohesive and integrated social unit with common territorial interests, including rights of residence on certain sites and grazing privileges in neighboring territories. The encampment is usually governed by a group of middle-aged or elderly men known as the "elders," or on occasion by a headman.

Social control among the nomads varies from control by a chief at one end of the scale to control by a group of elders at the other, with intervening variations. The control exercised is limited, however, by the strong individualism of the Tibetans. Tribes are also governed by the lamaseries to which they belong, and the lamaseries may exercise absolute control over a tribe or groups of tribes. In other instances, tribes may be grouped together in confederations or associations with common norms and interests, or tribes may band together in a purely military alliance against a common enemy. 1, 15, 60, 63, 70/

The formal means of enforcing conformance with norms consists of a system of penalties or fines imposed by the chief, the seriousness of the crime being relative to the importance of the person sinned against. Punishment is decided by the chief and the fines imposed by him become his property; punishment is difficult to enforce because of the right of refuge, which is inviolate. 1, 15, 70/

Nomadic encampments vary in size from 5 to over 80 tents and are always organized in the form of a rough circle. The winter quarters, consisting of mud-and-fence huts, sod houses, or variations of these,

resemble the villages of the farmers. Tents are low and rectangular, are made of black yak-hair cloth, and have slightly pitching roofs and free-hanging walls. They accommodate from 10 to 50 people (Figure 17). 1, 15, 60, 70/

> By an ingenious system of outside tent poles which are higher than the tent over which the guy ropes are stretched, the tent is more or less suspended by the edges of the roof and the corners and has only two sets of poles in the very center, on each side of the smoke vent -- about two feet wide -- which runs from front to back. The average tent makes one heavy yak load, and the poles another. Year by year it is renewed; two strips of tent cloth -- cloth is about a foot wide -- are sewn into the tent on either side of the smoke vent and the ropes are rearranged to move the roof out to the sides. Thus, the edge that drags on the ground is always old and frayed, while the center part of the roof is new. 1/

The nomads move to their first summer campsite in May, after a winter of comparative leisure that is broken only by caring for the sheep at lambing time in early spring. Travel is not advisable until after the heavy snows in the latter part of April and early May. The herds usually have sufficient grass around the winter encampment to last until time to move in May. In spring the radius of the grazing area increases. Since the herds must be brought back to the encampment each night for protection, the radius of the grazing area can be no longer than a daily trip to pasture and back. When the distance to grass becomes too great, the nomads begin their migration, sometimes breaking camp and moving to new pasture six to nine times before returning to the winter encampment in November. Several months before the final return, however, a number of the nomads will go to the winter encampment place and cut hay to feed the herds during the long winter.

After the return from the summer migration, the nomads begin their annual expeditions to obtain a year's supply of grain at the farming villages or the trading villages in the Sino-Tibetan Borderland, to visit the lamaseries, or to raid their neighbors or travelers (Figure 18). Travel is, therefore, most dangerous in nomad country during the winter season and until early spring, when their horses are no longer in condition to permit hard riding. 1, 15, 70/

The animal most commonly found in nomadic herds is the yak (yak applies to the ox; the cow is called a dri). (See Figures 12 and 18.) Ordinary oxen crossbred with the dri produce a dzo or hybrid yak. These hybrids are more docile than the yaks, and the females produce more milk than the dri. Except for mutton, yak meat is the meat most used and is the chief staple meat of the nomads. Mountain goats are also eaten. Deer, musk deer, gazelle, chicken, fish, eggs, pork, horses, and donkeys are rarely eaten. Yak beef is eaten fresh or frozen, cooked or raw. Yak hair is woven into cloth for tents and blankets and braided into ropes. Yak hides furnish containers for food and are used in making coracles, the little boats used to ferry the rivers of Tibet. 1, 15, 70/

The men do most of the heavy work around a nomadic encampment -- pitching tents, repairing tents, making belts, and hunting. They also take the yaks and sheep to pasture. The women, however, do the general work around the tents -- making butter, grinding the barley, etc. Food in a nomadic encampment generally consists of tea, barley flour, butter, mutton or yak beef, curds, and cheese, with little

variation among breakfast, lunch, and dinner. Nomads on the range may carry with them barley flour and dried raw meat, or yak cheese pressed into cubes and strung on yak hair. 15, 70/ The chief grain food of the nomads, as of all Tibetans, is tsamba, or parched barley, which is sometimes eaten raw and sometimes mixed with hot water or tea and yak butter into a kind of mush or dough. 15, 71/

The nomads of Tibet, both male and female, wear the distinctive Tibetan coat, which looks like a long double apron of sheepskin with the ends pulled up to the waist and tied so that the garment hangs down to the knees and forms a blouse in which objects can be carried (see Figures 3 and 13). The sleeves extend 12 to 15 inches below the hands for protection against wind and cold. Nothing is usually worn under the coat. Borders of blue or red wool or of leopard or other fur are indications of wealth. In wet weather the hairy side of the apron is worn outside. Blue cotton trousers may sometimes be worn. The Tibetans wear a kind of broad-brimmed top hat in summer (see Figure 3); a great variety of fur caps may be worn in winter. Knee boots with no distinction between the right and left foot are worn without socks. The nomadic women, like those of the other ethnic groups, plait or tie their hair up in braids and decorate it with silver and brass coins and shells, which represent their worldy wealth. 15, 70/

The nomads produce most of the export items of Tsang Tibet. The chief products are wool, yak tails, yak hides, the soft underwool of goats, borax, salt, musk, and medicinal herbs. The nomads also raise ponies and mules for sale to travelers and traders. 1, 15, 58, 69, 70/

Figure 12. A herd of yaks grazing in a high steppe valley. The large bull (right) stands about 5 feet 6 inches at the withers.

Figure 13. A Golok herdsman's house in the Central Mountain Region (Region E-2). The man in the center is probably a house lama. The herdsman's wife (left) is preparing food over the stone and mud stove.

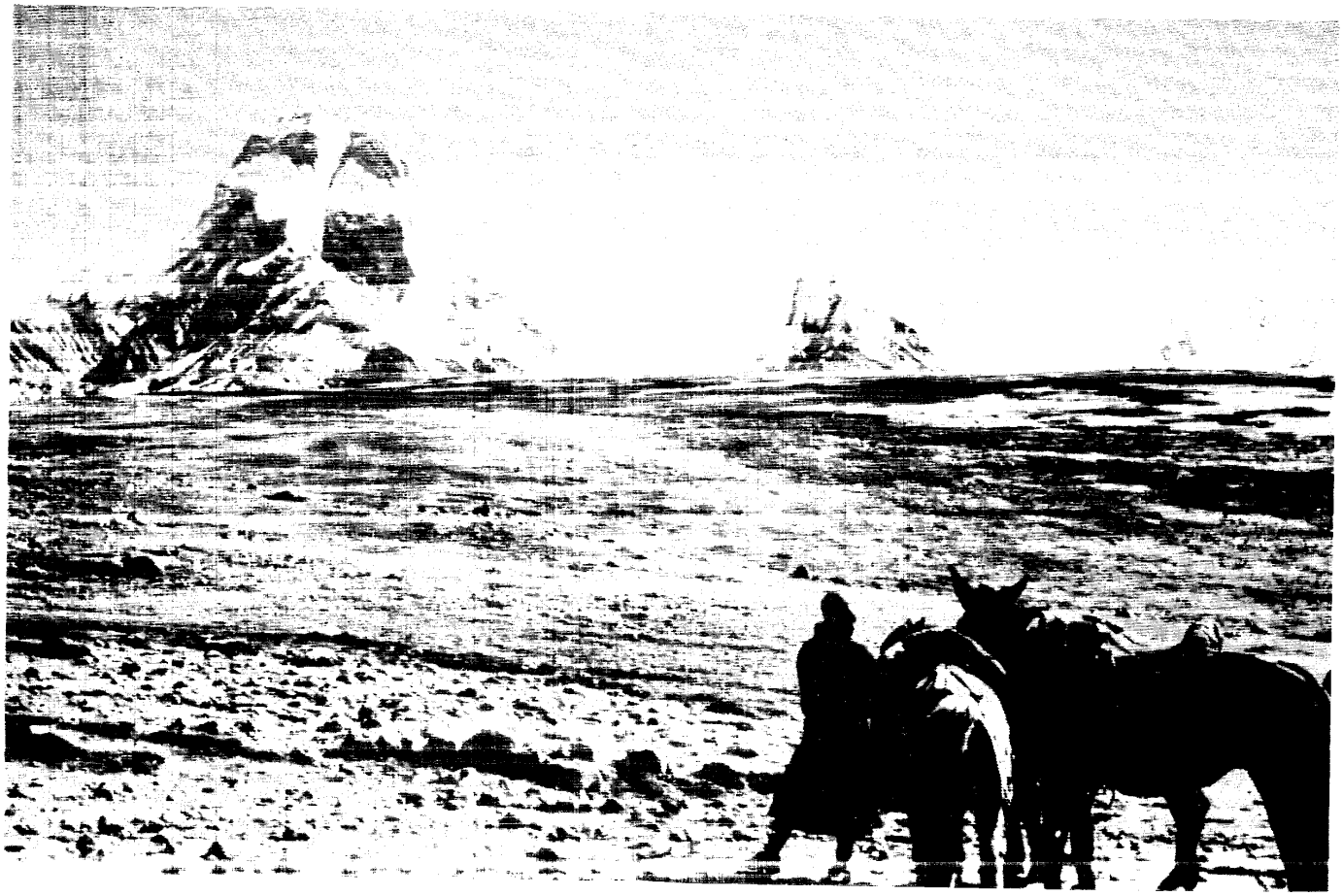

Figure 14. Landscape typical of the Chang Thang (Region F-1) in the Tangla Mountains along the southwestern Tsinghai border.

Figure 15. The short-grass steppe of the Outer Plateau (Region F-2) northeast of Yü-shu (Jyekundo).

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Figure 16. The town of Yü-shu (Jyekundo) in a valley of the Outer Plateau (Region F-2). Note the typical flat-topped Tibetan houses.

Figure 17. Tsang Tibetan nomads near their black yak-hair tent in the Outer Plateau (Region F-2).

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Figure 18. A caravan using yaks, on the road to Lhasa.

IV. The Gorges Region of Kham Tibet

A. General Characteristics

The Gorges Region includes the gorges of the Salween, Mekong, and Yangtze Rivers (Region G) and the Tibetan Valley Region (Region H). The Gorges have cut their way into the surface of the southeastern rim of the Outer Plateau, leaving steep-sided plateau spurs extending southward between the valleys. The gorges, including the valley walls up to the level of the Outer Plateau, are considered in this report as separate and distinct regions because of their unique terrain characteristics and because of the role that they play in the settlement and transportation pattern of southern Sikang. Most of the major towns and cities of southern Sikang are located in the gorges, which are to some degree protected from the extreme cold and biting winds of the uplands. Ya-chiang (Hokow), Li-hua (Litang), Pa-an (Batang), and Ch'ang-tu (Chamdo) -- all major caravan stops along the southern caravan route -- are located in the lower river gorges. Cities along the northern caravan route -- Kan-tzu (Kantse), Yü-shu (Jyekundo), and others -- are located in the upstream portions of the same gorges. The caravan routes themselves follow, wherever possible, either the river gorges or their tributary valleys.

A distinctive characteristic of the River Gorges Region is the marked tendency of tributary streams to flow south, parallel to the main rivers, for a considerable distance before turning abruptly into the main river. These tributary streams often flow through comparatively

open valleys with broad meadows and mixed deciduous and coniferous trees (see Figure 7). As the tributary nears the point at which it joins the main stream, its valley narrows and takes on more and more of the characteristics of the main gorge until, swinging abruptly around at right angles, the stream plunges into the main river. These smaller tributary valleys are utilized for cultivation in preference to the desiccated, rock-strewn main gorges, and most of the settled population is found in the valleys located on the flanks of the main ranges. These valleys are also used, wherever possible, for north-south routes of transport in preference to the more difficult main gorges. Routes cutting across the prevailing north-south trend of the gorge ranges tend to flank the main divides by transversing the tributary valleys. Although the resulting routes are longer, the gradients are easier than those of a frontal crossing. 36, 64, 72, 73, 74/

Two major natural geographic subregions may be distinguished as the river gorges pass from wide, flat-bottomed valleys near the Chang Thang, through deeper U-shaped glacial valleys in the middle stretches, to the very deep and rugged V-shaped gorges of the lower courses. The two major subregions are the Humid Gorges (Region G1) and the Arid Gorges (Region G2). A further distinction can be made between the semitropical jungle vegetation of the gorges along the Sikang-Yünnan border and the more temperate forest vegetation farther upstream. On the accompanying map, the approximate areas of the Humid Gorges Region and the Arid Gorges Region have been outlined but no attempt

has been made to indicate the extent of the rain forest within the Humid Gorges Region. The main area of rain-forest gorge appears to extend up the Mekong River from the Sikang-Yünnan border to a point above the town of Yen-ching. 36, 64, 71/

Although the exact locations of the transition from arid gorge to humid gorge are not exactly known, there is a point along the course of each of the three major rivers at which there is an abrupt change in vegetation. It is generally believed that these abrupt changes are due to latitudinal barrier ranges whose axes are at right angles to the valleys and to the prevailing moisture-bearing winds. There is a sudden dramatic change from cloud to sunshine and from wet conifer to dry thorny shrub. 36, 64, 72/

B. Geographic Subdivisions

1. The River Gorges Region (Region G)

a. The Humid Gorges (Region G1)

Although the mountains and the plateau areas between sections of the lower Humid Gorges Region are either snow-clad or covered with a thick sod of alpine plants, the deep valleys generally have a climate that is hot in the summer but cold in the winter. All the main ranges flanking the gorges are snow covered and have small remnant glaciers. Permanent snow beds occupy the deep tributary valleys far below the snowline of 16,000 feet. Since rain or snow falls during all seasons, the atmosphere is always moist, and the summers, especially, are very wet.

Below the snowline, the gorges are forested. To the south, the temperate forest gradually gives way to jungle resembling the subtropical Indo-Malayan vegetation. Toward the north, where the atmosphere becomes drier and the rainfall lower, conifers replace the temperate forests. 36, 64, 72/

Although the lower gorge region is generally exposed to the monsoon winds, vegetation varies locally, depending upon the orientation of mountain spurs (Figure 19). Between 5,000 and 8,000 feet is the temperate mixed forest consisting of pines, oaks, and maples, together with an admixture of temperate rain forest on the lower slopes. Below 5,000 feet the temperate rain forest becomes dominant. From 8,000 to 10,000 feet, the mixed broadleaf and conifer forest continues, but with an extensive development of undergrowth, especially rhododendrons. Where the valley walls rise to heights of 10,000 to 12,000 feet, conifers predominate -- mainly fir with a dense undergrowth of rhododendrons. On higher slopes, between 12,000 and 14,000 feet, the rhododendrons are dwarfed and the transition to alpine meadow and scrub is apparent. Above 14,000 feet, the vegetation of the valley walls consists chiefly of alpine turf on the flatter slopes interrupted by stretches of gravel or rock debris and cliffs.

The most distinctive characteristic of humid-gorge vegetation is its abundance. The trees are hung with moss, and there are numerous epiphytes. The dense growth of rhododendrons, in addition to the steep slopes, makes the forest difficult to penetrate. 36, 51, 64, 71, 72, 73, 74, 75/

b. The Arid Gorges (Region G2)

The exact upper limits of the Arid Gorges Region are not known. The headwater sections of the rivers, in the northern part of the Outer Plateau (Region F2), do not receive sufficient moisture to support humid vegetation (Figure 20). In the south, even though the climate is more humid the gorges are deeper and are situated in the rain shadows of the intervening mountain ranges. Only far to the south, where the rivers swing from southeast to south, can the moisture-bearing winds of the monsoon penetrate any distance up the gorges. 36, 64, 71, 72, 73/

The climate of the Arid Gorges Region resembles that of the Outer Plateau, being both drier and colder than in the lower gorges. High winds are as much in evidence here as on the Outer Plateau, but the winds tend to be warmer in the gorges. The summers are short, with ample but not excessive rainfall, and the winters are long and dry. 69/

The altitudinal characteristics of the arid gorges are as follows: The arid parts of the gorges lie mainly between 9,000 and 12,000 feet. The vegetation consists of shrubs, with a few pine, poplar, or juniper trees around the villages. On the valley floors and slopes lying between 12,000 and 14,000 feet, there is a direct transition to subalpine vegetation, consisting of a limited variety of rhododendron and other shrubs and a great number and variety of alpine flowers. From 14,000 to 17,000 feet is an area of alpine turf and dwarf alpine plants, rock debris, boulder slopes, and glacial

sand flats. From 17,000 feet to the snowline is an area consisting mainly of scree slopes with a few dwarfed alpine plants. 36, 64/

Cultivation in both the Humid and Arid Gorges Regions is confined to large alluvial fans, which have been terraced and may support a considerable agricultural population. Many of the fans are situated at a considerable height above the river and trees growing around the fan settlements, particularly walnut and pear, give them a parklike appearance in the spring. Considerable stretches in both the Humid and Arid Gorges Regions are uninhabited (see Figures 19 and 20). 36, 64, 73, 76/

Although altitudinal levels apply in general to the gorges, there are significant local differences resulting from the varied orientation of mountain spurs within the individual gorges. For example, east-west spurs from a main north-south mountain range present their flanks to the north and south. In the Humid Gorges Region, the contrast in the vegetation on the two slopes is significant. On north-facing slopes, the forest may extend to 15,000 feet elevation and a thick tangle of rhododendron shrub may continue to as high as 16,000 feet, whereas on the south-facing slopes of the same spur, tree and shrub growth will cease much lower down. In addition to the scantier covering of vegetation on the south-facing slopes, there is an accumulation of scree or rock debris, in marked contrast to the opposite slope, which may be covered with a tangled carpet of dwarfed shrubs (see Figures 19 and 20). 72, 73, 74, 75, 76/

2. The Tibetan Valley Region (Region H)

The Tibetan Valley Region consists of the drainage basin of the Tsangpo River in southwestern Sikang and the mountain ranges that separate the Tsangpo Basin from the Outer Plateau to the north and from India to the south. In the north is the Nyenchhen Thanglha (Region H1), which trends in an east-west direction across southern Tibet into southwestern Sikang and then curves around the bend of the Tsangpo to form the divide between the Salween Valley and the plains of northwestern India. The deeply gullied foothills of the Nyenchhen Thanglha extend almost to the Tsangpo River.

Bordering the Tsangpo Valley (Region H2) on the south is the main range of the Himalayas (Region H3), which lies along the southern Sikang border to the Dihang Gorge. In contrast to the steep southern slopes, the slopes of the Himalayas on the Tibetan side have fairly easy gradients, and passes through the mountains open out onto the plains of the Tsangpo Basin. The Himalayas, however, obstruct the rain-bearing monsoon winds, and as a result the Tsangpo Basin is arid, changing to monsoon forest only in the steep, V-shaped gorge of the Dihang. 69/

Although the Tsangpo Valley in Tibet is fairly open, the valley narrows to the east and rock spurs encroaching upon the river separate the few small alluvial plains from one another. Land below 13,000 feet is extensively cultivated by means of a network of irrigation canals. Small stands of trees surround the farms and settlements; elsewhere the vegetation consists of coarse grass and wormwood scrub. 69/

Since the Tibetan Valley Region, being isolated by the Nyenchhen Thanglha and Himalaya Ranges from the rest of Sikang, is oriented toward Lhasa and southern Tibet rather than toward Sikang, it is not fully treated in this report. 69/

C. The Kham Tibetans of the Gorges Region

The Kham Tibetans are sedentary agriculturists who cultivate small plots of terraced land on the steep slopes of the main gorges or level land in the high tributary alpine valleys of the major rivers of southern Sikang. Kham Tibetan tribal villages are somewhat isolated by high mountain ranges and by difficult trails. Because of this isolation, the population distribution of Kham Tibetans in Region G is suggestive of oases; nowhere is agriculture continuous, but communities are spotted along the course of a river and its tributaries wherever level land occurs or where slopes permit terracing.

The community of the Kham Tibetans extends beyond an aggregate of village huts, including also definite territorial interests in a valley and its adjacent grazing and forest lands. A typical village of these "people of the earthen houses" may comprise a dozen to 70 or 80 families. Houses of these sedentary Tibetans usually consist of two stories built in such a way that the roof of the ground floor forms a flat terrace (see Figure 16). The second floor consists of one or two summer rooms which open onto the terrace. The ground floor has an open stable in the front and a large "family" room with a fire-place to the rear. Kham Tibetan houses characteristically have large

stacks of wood piled around the house, which symbolize the prestige of the family, and grain-drying racks are placed along the front wall or the edge of the roof (see Figure 10). 1, 37, 70/

Barley, peas, and wheat are the major crops in Kham Tibet. The cultivated fields are located along the banks of the gorges and some in the higher mountain valleys. The lands of adjacent farms are usually plowed in a different direction for identification. In theory all pasture and forest lands are communal property, but many of them are actually controlled by the village headmen or the lamaseries 70, 76/

Draft animals are almost entirely lacking, and plow animals are usually shared by two farms or leased from the nomads. The use of animal labor may be paid for in human labor. 1, 76/

The agricultural cycle of the Kham Tibetans begins at the New Year (the second new moon after the winter solstice), the exact date of fertilization and plowing being determined by the lamas. At that time the system of community fences is in good repair, and the community is practically closed to caravans. At harvesttime all fields, regardless of size, must be harvested in the same length of time in order that none of the grain may be stolen. After the communal fences have broken down, fields no longer have protection against thieves or caravan animals, and the district is opened to travel. After the harvest, the threshing and grinding of grain is completed quickly, before the millraces freeze. 1, 70, 76/ Only about 10 percent of the planting is harvested because of the short growing season, lack of fertilizer, and careless harvesting methods. 76/

The most important daily necessities of the Kham Tibetans are grain, tea, butter, beef, and wool; consumption varies with the economic status of the household. Grain, butter, and tea are the essential staples in the Tibetan household, and the three are combined in the national dish, tsamba (parched barley flour moistened with tea and butter). 70, 76/

The farms of the sedentary Tibetans supply them only with staple food crops; surplus grain must be traded with the nomads for meat, sheep, and goatskins. 1, 70/

There are three types of community organizations in Kham Tibet. The most common is direct control by a secular administrator or chieftain over a community; weaker communities may be attached to it by some kind of political affiliation or even by a military alliance. This feudalistic system of community control has prevailed for several centuries, and places remote from Chinese Government rule are still controlled by chieftains and their assistants. The areas with some Chinese settlers are more directly under Chinese control. The Tibetan chieftains have their posts by right of heredity, and succession is dictated by family lineage. The chieftain's subordinates are personal servants who perform all sorts of personal and administrative tasks. He himself, however, makes laws, levies fines on transgressors on the basis of the status of the injured party, and grants land to subordinates. Administration in Kham Tibet is therefore a personal rather than a collective responsibility, and dealings with the chieftains are often forwarded with the help of bribes and tribute. 1, 76/

The pao-chia system, another modification of direct control, was originally introduced by the Chinese Nationalists but has been continued by the Communists. It constitutes an additional layer of political control in which the pao (borough) of 100 families is divided into 10 chia (wards), each under a headman or supervisor. In many cases, the officials in the local government take corresponding postions in the pao-chia system. In most cases, the pao-chia system becomes secondary to the older system, but the two-layer responsibility encourages social and economic stagnation through double exploitation. Lamaseries may enjoy special economic and social privileges. 76/

The second type of control over the community is through the lamaseries, which exercise it directly, with the chieftains having only secondary control. 1, 76/

The third type of control is the absolute, autocratic rule of the lamaseries. This type exists mainly in remote areas that are inaccessible to civil administration. The control over land, labor, money, and commodities enables the lamaseries in any community to exercise powerful social and political controls. The everyday needs of the peasants for guidance in religious matters, for marriage and burial rites, and for decisions concerning planting times make the people dependent upon the lamas and reinforce the control of the lamaseries. 1, 60, 63, 76/

The control by the lamaseries is further extended by their role as loan sharks and by their activity in the organization of caravans, in trading, and in the export-import business. Lamaseries are thus

an integral and indispensable part of the feudal agricultural system and constitute an important instrument of social and political control in Kham Tibet. 1, 76/

There is a sharp class division among Kham Tibetans between the ruling group and the producing group. The first group is made up of chieftains, full-time landlords, lamas, and employers; the second group consists of four subclasses of peasants -- tse-ba, ko-ba, la-da, and ta-du (Figure 21). The tse-ba are peasants with a little surplus land to lease; the ko-ba are tenant-farmers who pay labor rent to the tse-ba, to the full-time landlords, or to a lamasery; the la-da are tenant-farmers of the lamaseries who are required to labor for the lamasery from 1 to 9 months each year; and the ta-du are either laborers or part-time tenants. The la-da are sometimes able to raise their status through accumulation of land or trading. 1, 76/

D. Contacts Between the Kham Tibetans and the Tsang Tibetans

Culture contact between the Kham Tibetans and the Tsang Tibetans occurs in three ways: (1) trade, in which the nomads are the agents of contact; (2) migration of sedentary Tibetans to the nomad camps to help with the fall haying; and (3) a permanent shift of the sedentary Tibetans (usually either the poorest or the wealthiest) to the nomadic life. Despite the greater degree of comfort and the more secure existence of the farmer, the superior morale of the nomads and the lure of nomadic life seems to account for the shift. Some tribes are half nomadic and half sedentary, and even families may be divided in the same way. Within such tribes or families, there are

strong contrasts between the two ways of life in the form of differences in clothing, attitudes, and norms. 1, 15, 70/

The superiority of the nomad is indicated by his greater tolerance, sportsmanship, and trustworthiness. 1/ Sedentary Tibetans give guests and travelers poorer treatment than do the nomads; their women have a lower status than among the nomadic tribes; and their food taboos are much less strict. The superior physique and health of the nomads contrast sharply with the syphilitic and leprous condition of the sedentary people.

The contrasts among the Tibetans have been summed up as follows:

> Aside from all these interesting and diverse aspects of organization the most understanding aspect of Tibetan life from the standpoint of the study of culture contacts is the absolute division, on the basis of occupation or subsistence economy, that cuts across state, tribe, clan, and even family, separating the people in interests, traits, and even in dialect. Together with factors of location, etc., it makes of the Tibetans of the northeast two distinct groups: the sedentary or farming, peoples of the low valley bottoms and the nomadic or pastural, people of the grassy steppes. This difference is so great that the culture relationship between the nomadic and sedentary people may be considered as a problem of culture contact quite as clearly defined as, and in some respect more interesting than, the problem of culture contact between people of different race. 1/ (Compare Figures 3 and 21.)

V. Conclusions

Three long-standing problems relating to the lands and peoples of West China must be taken into consideration when evaluating the contemporary situation and future position of West China. These are: (1) environmental adjustments, (2) culture contact and conflict, and (3) social control. All have a bearing on the possibilities of Communist control and development of West China.

A. Environmental Adjustments

Up-to-date information on cultural relations in the little-known area of West China is meager, and many of the contemporary reports are conjectural or speculative. It is advisable, therefore, to assess any estimates of the future role of West China against a background of environmental and cultural relationships. This background has remained relatively stable, even through the past few decades of rapid political and social upheaval in China. Considering the limited range in land use possible in the arid steppes, the alpine plateaus, or the forested gorges, it seems logical that variations in culture among peoples inhabiting a particular environment should be restricted to the nontechnical, esthetic aspects. In modes of livelihood, in the techniques and mores of travel, and in the forms of social control of individual behavior, such peoples are notably similar.

Thus the major criterion for differentiating ethnic groups in West China is their adjustment to environment. This criterion was one of the bases for delimiting the three main geographic regions of West China:

(1) the Frontiers of Chinese Agriculture, with its agricultural and commercial society, (2) the High Steppes of Tsang Tibet, with nomadic people, and (3) the Gorges Region of Kham Tibet, with a society based on aboriginal shifting cultivation. Throughout any one of these regions, each of which contains a number of independent tribes or communities, the essential forms of adjustment to environment are similar. The day-to-day activities of the nomads, the foods they eat and the clothes they wear, the basic organization of their encampments, and the yearly cycle of their migrations -- all have a similar pattern regardless of whether they are Tsang Tibetans or Tsaidam Mongols. In the same way, the activities, techniques and tools, and mores of the sedentary cultivators of the forests have developed within a relatively narrow range of environmental conditions.

Since the mutually dependent cultural and environmental relationships between the regions constitute solutions, evolved over many centuries, to the problems of survival in difficult environments, they may be considered a relatively stable background against which social and economic change in West China must take place. It is suggested that despite current Chinese Communist efforts to "organize" the caravan trade, to set up cooperatives among the nomads, or to reform the land systems of the sedentary cultivators, the ingrained

ways of doing things in West China will be susceptible to little lasting change or control.*

B. Culture Contact and Conflict

The inflexibility of West China folkways and mores generates conflict when differing cultures come into contact with one another. Culture conflict is characteristically less severe between groups with similar or only mildly contrasting ways of life, such as the Tsaidam Mongols and the Tsang Tibetans, or the Kham Tibetans and the aboriginal cultivators. It is also generally true that conflict between groups with contrasting economies is more intense in regions where more than one type of land use is feasible. Thus conflict between the nomads and agriculturists is centered mainly in the arable steppe lands of western Tsinghai and in the Kansu Corridor.

C. Social Control

The most significant factor bearing on culture conflict between the various ethnic groups of West China, however, is related to the religious and social systems that the groups have built up in order to maintain control over the behavior and ideas of their members.

*The Chinese Communists have made great efforts to gain the support of the minority peoples of China through the establishment of so-called autonomous governments. Viewed from the perspective of the efforts of former Chinese governments, the Communists' attempts to extend political and social control over minority areas apparently have been generally successful.' The degree of success, however, varies widely from almost complete domination in minority areas of densely populated East China to nominal control of only the larger cities in most of the relatively inaccessible minority areas of West China. For a discussion of the development of autonomous governments for all minority areas of China, see CIA/RR-G-7, Autonomous Governments in Minority-Inhabited Areas of Communist China.

These social controls react upon and affect the modes of environmental adaptation -- sometimes to their benefit, but often to their detriment. Thus ramifications of the Lamaist religion in West China include (1) the designation of one out of every three males to a nomastic life, (2) the imposition of aribitrary controls over agricultural schedules, (3) the preemption of large tracts of arable land, forests, and pastures, (4) the partial control of commerce and trade, and (5) the imposition of unrealistic food and sex taboos. These extensions of feudalistic control not only make the problem of survival in a harsh environment more difficult for the Tibetans, but put them in a disadvantageous social position in relation to other ethnic groups. The situation explains, for example, why the encroachment of Chinese into Tibetan agricultural villages of the Sino-Tibetan Borderland has more often resulted in retreat or acculturation of the Tibetans than in conflict. On the other hand, the effect of religion on Moslem life has been to increase the capacity of the Moslems to adjust themselves to a variety of environments and to suit them to occupations and positions of leadership for which the less militantly religious Chinese are not fitted. The strength of the Islamic religion, which is the prime source of conflict between the Moslems and the Chinese, also constitutes the main political, religous, and social problem facing the Communists' plans for the economic development of West China.

D. The Possibilities of Communist Control and Development of West China

The areas of West China where an increased tempo of social and economic development may be expected are eastern Kansu and, to a lesser extent, the Kansu Corridor. The present efforts of the Communists to push forward construction of the Lan-chou--Sinkiang railroad are pointed toward a day when the Corridor will be even more important than it is today as a connecting link between the western province of Sinkiang and China Proper. The meager resources of the Corridor, however, will not permit as high a degree of economic development there as in eastern Kansu or Sinkiang. For its economic development the Corridor must rely upon the Yü-men oilfields and the possibility of discovering mineral resources in the little-explored Nan Shan. Since the Corridor, however, has neither as much agricultural land as eastern Kansu nor as great mineral wealth as Sinkiang, it seems destined to remain primarily a corridor area through which the railroad and roads pass.

The marginal agricultural areas of eastern Kansu have been for centuries the main frontier of Chinese agricultural expansion. The problems of insufficient land and water are complicated by the co-existence of two groups of people with contrasting ways of life. Irrigation, crop management, soil conservation, and reforestation are parts of the Chinese Communist land-reform program. Despite attempts to woo the Moslem minority with autonomous government,* overenthusiastic

*See CIA/RR-G-7.

Chinese land-reform cadres have already precipitated Moslem uprisings reminiscent of Kuomintang days. The progress of land-reform and improvement programs in Kansu will depend to a large degree upon a satisfactory solution of the problem of culture conflict between Moslems and Chinese.

Eastern Kansu is currently connected with North China by the Lan-chou extension of the Lung Hai railroad. There are also indications that the city of Lan-chou is to be developed into an inland industrial center, but the possibility of industrial development is complicated by the presence of a militant and political unreliable Moslem minority. Eastern Kansu might also be developed as the northern collection point for the products of the steppe nomads of West China, which would involve the incorporation and expansion of the traditional trade of the Kansu caravans. Reported active construction work on a railroad from Ch'eng-tu in the Szechwan Basin through the rugged and economically unproductive Min Shan to T'ien-shui in Kansu reinforces this possibility. The line would connect two "ports" that are the gateways of caravan trade in West China -- Lan-chou and Ch'eng-tu -- with the Chinese railroad and Yangtze River systems.

The recent attempts to extend social and political control into Sikang are also related to the Communist desire to control and exploit animal and mineral resources of West China. Despite reports that the Communists have established political control in Tatsienlu (K'ang-ting) and other major cities of Sikang and that motorable roads have

been extended part way across Sikang, the attempts to incorporate the independent nomads and the even more recalcitrant buffer tribes into the Communist administrative setup through the creation of autonomous governments have not been as successful as with more accessible minorities in other parts of China. The Yi-chia, and to a lesser degree the Ch'iang and the Gyarong, have resisted Chinese Communist control.

The Sino-Tibetan Borderland is an area in which the Communists have weak or unstable control. It is particularly vulnerable, not only as the gateway to West China but also as an extensive refuge area harboring potentially dissident minority groups. In this area the adverse effects of intraregional conflict on trade, transportation, and economic development may prove detrimental to the Communists.

The nomadic Tibetans and Mongols of the vast, remote, and inhospitable areas of the Outer Plateau and Tsaidam are an unknown factor in the extension of Chinese Communist control into West China. These peoples are loosely organized and appear to be politically disinterested. The difficulties of establishing any kind of effective socio-political control among scattered groups of mobile, traditionally independent nomads may be almost insurmountable. The main agents of contact with the nomads are, of course, the trade caravans. Although the Communists have had some success in maintaining control over Tibetan trade, Kansu trading caravans are dominated by Moslems, who are still receiving "hands-off" treatment.

In the southern part of West China, the only effective agent of social control over the nomads and sedentary farmers is the lamasery. It is probable that the Communists will continue to attempt to undermine the influence of politically unreliable lamas and usurp the control mechanisms of the lamaseries for their own purposes.

APPENDIX A

ROUTES OF WEST CHINA

Routes in West China in general connect four major regional centers: the religious center of Lhasa in the southwest, the province of Sinkiang and the USSR in the northwest, and the frontier market centers of the northeast and the southeast.

The most important corridor of communication and trade in West China is the Northwest Highway, which extends from Lan-chou through the Kansu Corridor to Sinkiang and the USSR. This is the most traveled route from China Proper to the west and is the safest route to travel in all of West China. For the most part, it is a gravel road with fairly easy grades that connects a string of oases. Along the route of the Northwest Highway are some of the major cities of West China.

From Lan-chou the road crosses the Wu-chiao Ling, an outlier of the Nan Shan, to the first oases at Wu-wei, following the Great Wall for the greater part of this most difficult section of its route. From Wu-wei, the highway continues to parallel the Great Wall and extends northwest across the short intermittent streams of the Nan Shan, passing first through the irrigated oases of Chang-yeh (Kanchow) and Chiu-ch'üan (Suchow) in the Etsin Gol Basin and then through Yü-men and An-hsi Oases in the Su-lo Ho Basin. At An-hsi the road turns to the north and strikes off across the barren gravel slopes of the Pei Shan toward the Kansu border and Sinkiang.

The Communists plan eventually to extend the Sinkiang railroad to parallel the Northwest Highway. Construction of the railroad is now underway between Lan-chou and Wu-wei.

The second major objective of travelers in West China is the religious center of Lhasa in Tibet. Lhasa, in addition to being one of the major centers of worship in the Lamaist religion, is a major market center for southern Tibet. All caravan routes in West China converge on Lhasa, regardless of whether they come from the north, northeast, or east.

The northernmost of the caravan routes to Lhasa extends from An-hsi in western Kansu southward across the Nan Shan to the Tsaidam Basin, then through the Basin to Nai-chi-kuo-lo Pass in the Kun-lun Shan and across the Chang Thang and Outer Plateau to Nagchhu Dzong and Lhasa. Nagchhu Dzong is a small mud-hut village where caravans from the north and northeast converge and reorganize before continuing on to Lhasa. The hazardous journey across the Tsaidam and the mountains and plateaus of western Tsinghai must be undertaken in large caravans, because they afford maximum protection against bandits and the natural dangers of the Tibetan environment.

The second main caravan route connects the trading centers of eastern Kansu and eastern Tsinghai with Lhasa. It extends from Hsi-ning in the Koko Nor region southwestward across the Amne Machin and the headwaters of the Yellow River to Yü-shu in southern Tsinghai. From Yü-shu the route extends in a generally westerly direction,

connects with the north-south route near Nagchhu Dzong, and thence continues to Lhasa. This route and a road from Tatsienlu via Yü-shu to Nagchhu Dzong are both known as the Chang-Lam or Northern Road, and both cross the Outer Plateau in the vicinity of the Tsinghai-Sikang border (see Figure 18). Although the terrain in this part of the plateau is easier to traverse, having many plains and relatively low passes, the high elevation and constant exposure to the bitterly cold winds make a journey along the northern route both arduous and hazardous. The journey from Hsi-ning to Lhasa takes about 50 days. Caravans from Lhasa usually leave in May or June and return in October. As caravans travel from Lhasa northeastward and pass through the Yellow River headquarters area, grazing land and water become more plentiful, but danger from the Golok tribes increases. Consequently, only large caravans undertake the journey.

The third important caravan route in West China extends from Tatsienlu in eastern Sikang to Lhasa. Known as the Gya-Lam (China Road) or Ja-Lam (Tea Road), it is the major route of trade between West China and Tibet and is the quickest and best route from China Proper to Tibet (Figure 22). Even though the road crosses many high and difficult passes and deep gorges, the altitudes encountered are generally lower than along other routes, and supplies of water, fodder, and food are more easily obtained. The Gya-Lam runs from Tatsienlu (where it connects with the motor road from Ch'eng-tu and the Szechwan

Basin) to Lhasa via Li-hua (Litang), Pa-an (Batang), and Ch'ang-tu (Chamdo). Caravans require about a month to make the journey from Ch'ang-tu to Lhasa.

There are a number of secondary caravan routes along the river gorges that connect the Chang-Lam and the Gya-Lam with Yünnan and Assam to the south. Caravan movement on both the northern and southern routes may be blocked by snow on the higher passes during the winter months (December to March). Interruptions in the summer months are usually caused by washed-out bridges and landslides in the rain-soaked river gorges.

There are few modern motor roads in West China, and nearly all transport is by pack animals or human carriers. The only areas in which wheeled traffic is possible are in the vicinity of Tatsienlu. The motor road from Tatsienlu to Ch'eng-tu is believed to be in good condition, and reportedly the northern caravan route has been improved for motor traffic as far as Kan-tzu and possibly as far as Yü-shu. Of all the caravan routes, the northern, or Chang-Lam, has the greatest possibilities for improvement.

The principal pack animals are ponies, mules, and yaks (see Figure 18). Yaks are usually employed in crossing more difficult and higher terrain, whereas horses and mules are used for long-distance marches. Camels are used in caravans traveling from Outer Mongolia via the Tsaidam Basin. In the Chang Thang, even sheep are used to carry salt.

Yaks, donkeys, and mules can carry loads of 170 pounds. The yak can travel for 6 to 8 hours at the rate of 15 miles a day, whereas the mule can carry a load of the same weight for 20 to 25 miles a day. Sheep and goats can carry only 20- to 25-pound loads. 1, 3, 4, 6, 14, 15, 18, 21, 23, 27, 60, 70, 73/

A caravan on the march usually makes an early start, before 5:00 a.m., regardless of low temperature, because most of the journey must be completed before 2:00 p.m., when the fierce midday wind begins.

The Astin Tagh, Nan Shan, Kun-lun, and Amne Machin are obstacles to movement because of the steepness of the slopes leading to the mountain passes, the prevalence of landslides, and the uncertainty of procuring water, fuel, and fodder. Routes other than those followed by the main caravans are largely unexplored and unknown. Movement is generally easier in the Nan Shan than in the Kun-lun Shan, and the latter is easier to cross than its parent range, the Astin Tagh. Travel across the Amne Machin and its associated ranges is still easier because the passes are wide and low and there are relatively level plains areas between the ranges.

Travel in the Tsaidam Basin varies in difficulty with the type of terrain. Movement is easy on gravel plains and difficult on the salt pans, but dunes and soft, sticky salt bogs make travel across the area of the Tsaidam salt swamps hazardous without expert guidance.

Figure 19. The humid gorge of the Shou Chu, a tributary river of the Yangtze in southern Sikang (Region G-1).

Figure 20. The arid gorge of the Mekong River in southwestern Tsinghai (Region G-2).

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Figure 21. Kham Tibetan peasants from the Shou Chu Valley shown in Figure 19.

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Figure 22. Travelers on the Gya Lam (China Road) en route from Chamdo to Lhasa.

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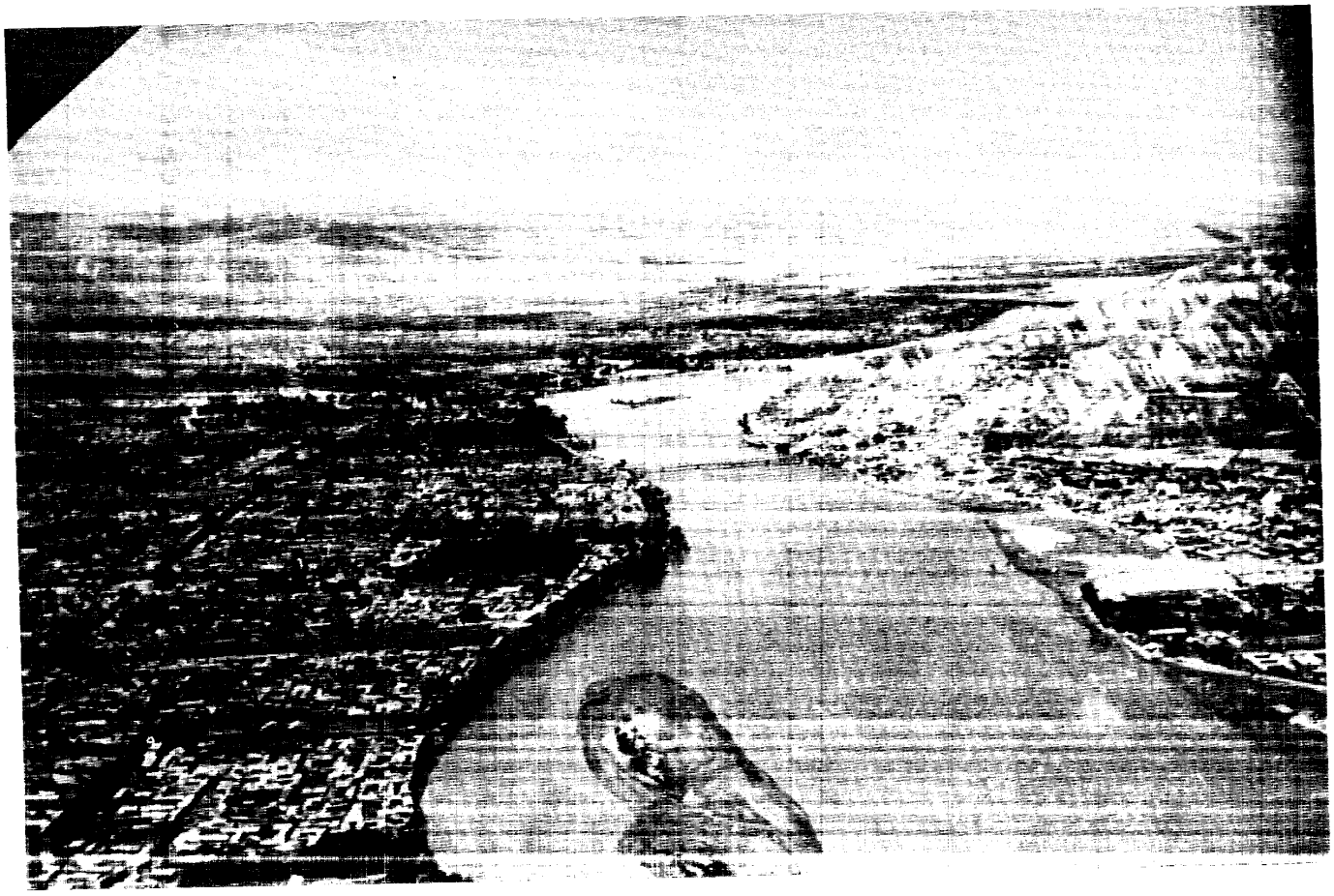

Figure 23. The Yellow River looking upstream (west), showing the city of Lan-chou at the left. The steel bridge (center) connects Lan-chou with the Northwest Highway and the road to Sining.

APPENDIX B

CITIES OF WEST CHINA

In the cities of West China, the houses are mainly one-story mud, mud-brick, or masonry buildings. Few of the cities have modern water supply and sewer systems. Water is scarce, poor in quality, and generally contains salt. The open ditches that bring the water to the towns from mountain streams or wells are usually contaminated, often being used by humans and animals for sewage disposal. Electric power facilities are, for the most part, lacking. Most of the cities, however, have radio, telephone, or telegraph facilities. Information on the capacity or quality of hospitals in the major cities is scant and unreliable.

Some of the major cities of West China are as follows:

Lan-chou (Kaolan), the capital of Kansu, is the most important trading and administrative center of northeastern West China and has a number of industrial installations, including an ordnance factory, a machine shop, a gunpowder mill, a small chemical plant, several weaving mills, a tanning plant, a paper mill, claypits, and brickkilns (Figure 23). Its population, estimated at 156,000 as of 1946, lives in a compact walled section on the right bank of the Yellow River and in mixed farming and residential sections to the east, south, and west. It is the only major city in West China that is connected by rail with North China. It has good access by roads to all parts of China and Central Asia. Lan-chou is on the telephone

and telegraph network of North China, and has a radictelegraph transmitter and a broadcasting station. 78/

Ch'ang-tu, with a population of 9,500, is an important stopping point on the Gya-Lam (China Road) between Lhasa and Tatsienlu (K'ang-ting). It is connected by telegraph with China Proper.

Chiu-ch'üan, located 68 miles east of the Yü-men oilfields, is an important junction on the Lan-chou--An-hsi road and had a population of 10,000 to 20,000 in 1943. (The Yü-men oilfields are connected by pipeline with a refinery 2 miles north of the field. Oil storage facilities at the fields have a reported capacity of 1,500 barrels, and an additional 500 barrels can be stored at the refinery.)

Hsi-ning, the capital of Tsinghai Province, is an important trading center on the caravan route connecting the Lan-chou area with the main caravan route to Yü-shu.

Tatsienlu (K'ang-ting), the capital of Sikang Province, had an estimated population of 11,000 in 1948 (see Figure 8). It is the center for Tibetan trade and a junction for the caravan route to Ch'ang-tu and to Hsi-ning via Yü-shu.

Yü-shu (Jyekundo) is the junction point of the Tatsienlu--Hsi-ning road and the caravan trail from Lhasa (see Figure 16). An airfield is located nearby. 5, 17, 35, 47, 58, 69/

APPENDIX C

GAPS IN INTELLIGENCE

The most serious gap in intelligence on the environment and people of West China is the complete lack of comprehensive studies of the area as a whole and of detailed studies of geographic regions or ethnic groups in particular. Although a number of westerners have explored or traveled in various parts of West China, their accounts are fragmentary and little information is given on areas off the main caravan routes. Reports on ethnic groups are usually extremely localized, and information on neighboring groups is either unrelated or nonexistent. There is very little intelligence on current cultural relations between ethnic groups, recent developments in trade and commerce, and activities of the Communists in West China. Probably the most serious defect in the intelligence available is its lack of timeliness; information on West China included in this report may be anywhere from a few months to 50 years old.

APPENDIX D

SOURCES AND EVALUATION OF SOURCES

1. Evaluation of Sources

Information of any kind on West China is fragmentary and dated. Although there has been a limited amount of recent information from returned missionaries, business men, and others who have visited the area, it has been concerned almost exclusively with the built-up areas of West China. The bulk of information on the land and people of West China was pieced together from accounts of explorers and travelers, Japanese Army General Staff reports, the analysis of Chinese and American maps, and fragmentary information in Chinese newspapers, periodicals, and books.

The only overall source for generalized information on the geography of West China is contained in National Intelligence Survey 39, which has not yet been published. [redacted]

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25X1X7001

The best overall source for information on the relationships among the ethnic groups in the Sino-Tibetan Borderland is Cultural Relations on the Tibetan-Kansu Border, by Robert B. Ekvall. Sir Charles Bell's The People of Tibet is the best general source for information on the Tibetans.

2. Sources

Evaluations, following the classification entry and designated "Eval.," have the following significance:

Source of Information	Information
A - Completely reliable	1 - Confirmed by other sources
B - Usually reliable	2 - Probably true
C - Fairly reliable	3 - Possibly true
D - Not usually reliable	4 - Doubtful
E - Not reliable	5 - Probably false
F - Cannot be judged	6 - Cannot be judged

Evaluations not otherwise designated are those appearing on the cited document; those designated "RR" are by the author of this report and apply only to the specific information incorporated into the report. No "RR" evaluation is given when the author agrees with the evaluation of the cited document.

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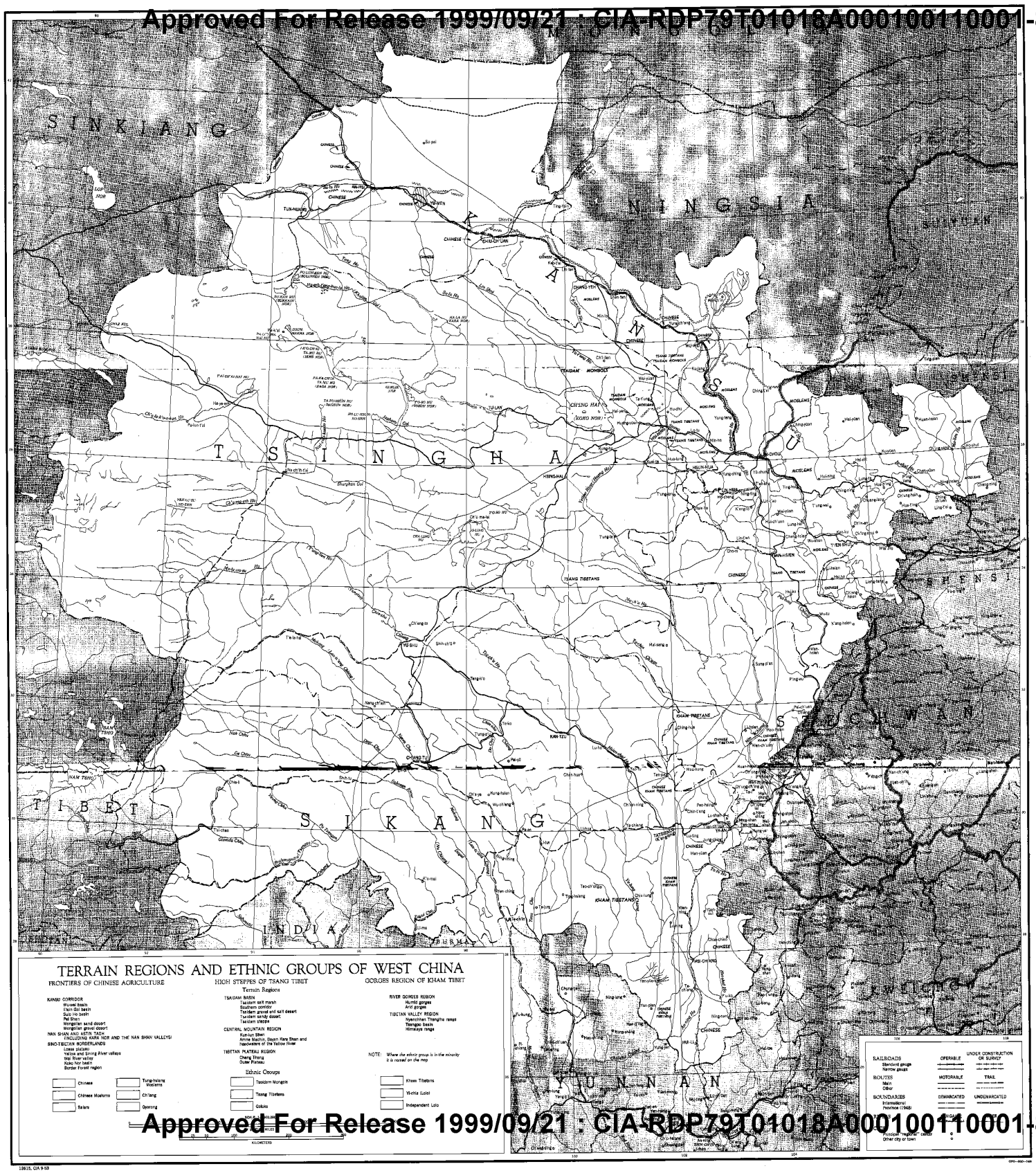

TERRAIN REGIONS AND ETHNIC GROUPS OF WEST CHINA

FRONTIERS OF CHINESE AGRICULTURE

KANSU CORRIDOR
Wuwei basin
Chen Do basin
Sulo Ho basin
Pei Shan
Mongolian sand desert
Mongolian gravel desert

NAN SHAN AND ASTIN TAGH
(INCLUDING KARA NOR AND THE NAN SHAN VALLEYS)

SINO-TIBETAN BORDERLANDS
Loess plateau
Yellow and Sining River valleys
Wei River valley
Koko Nor basin
Border Forest region

HIGH STEPPES OF TSANG TIBET

Terrain Regions

TSAIDAM BASIN
Tsaidam salt marsh
Southern corridor
Tsaidam gravel and salt desert
Tsaidam sandy desert
Tsaidam steppe

CENTRAL MOUNTAIN REGION
Kun-lun Shan
Amne Machin, Bayan Kara Shan and
highlanders of the Yellow River

TIBETAN PLATEAU REGION
Chang Thang
Outer Plateau

GORGES REGION OF KHAM TIBET

RIVER GORGES REGION
Humid gorges
Arid gorges

TIBETAN VALLEY REGION
Nyenchen Thanglha range
Tsangpo basin
Himalaya range

NOTE: Where the ethnic group is in the minority it is named on the map

Ethnic Groups

Chinese
Chinese Moslems
Salars
Tung-hsiang Moslems
Chiang
Qiarong
Tsaidam Mongols
Tsang Tibetans
Goloks
Khams Tibetans
Yi-chia Lolol
Independent Lolo

KILOMETERS

	OPERABLE	UNDER CONSTRUCTION OR SURVEY
RAILROADS		
Standard gauge		
Narrow gauge		
ROUTES	MOTORABLE	TRAIL
Main		
Other		
BOUNDARIES	DEMARCATED	UNDEMARCATED
International		
Provincial (1960)		
Region, district, canton		
Other city or town		

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GEOGRAPHIC INTELLIGENCE REPORT

PHYSICAL AND CULTURAL GEOGRAPHY OF WEST CHINA

Kansu, Sikang, Tsinghai, and Northwestern Szechwan

CIA/RR-G-11
October 1953

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